Interview

Interviewers:
Cristina Camargo and Viktor Sinkunas

Thiago Rached Pereira

Cofounder at Letrus (2016-current); Guest lecture at USP - *Escola Politécnica*, Columbia, Harvard and Stanford (2013-2017); Advisor/board member at eduK, alura/Caelum (2014-current); Advisor *Fundação Lemann* (2014-2015); Master's degree, Education Leadership - Columbia University in the City of New York (2014-2016); Bachelor, Bussiness Administration - *Universidade de São Paulo* (2001- 2006); Bachelor, Marketing Management - ESPM *Escola Superior de Propaganda e Marketing* (2001-2004).
https://orcid.org/0000-0003-4944-5863

Many authors argue about the power of education in the population's survival and development. In UNESCO's website, we can find the following paragraph: "Education transforms lives and is at the heart of UNESCO's mission to build peace, eradicate poverty and drive sustainable development". What is your opinion about it? And how could undeveloped countries achieve an appropriate level of education?

I believe education is the keystone to any individual and collective development. In my opinion, the challenge of prioritizing education on a political level demands clear and specific objectives, rather than broad and generic concepts, such as "to improve education quality", "to change schools" or "to enhance innovation". As almost everyone has an opinion about how to improve education, I see long and unproductive discussions replacing concrete problem-solving initiatives.

Regarding how undeveloped countries can reach greater educational standards, I believe that the short answer is (a) goal alignment and (b) innovation. I will explain as follow. I think that education greatest purpose is social justice and, therefore, reducing social disparity is its definitive challenge. In that sense, I see two important steps. First, it is critical that any policy or project design in education puts social impact at the center of all strategic decisions.

Once we are able to clarify and align our end goal - equal opportunities to people from diverse social backgrounds - collaborating and building new educational initiatives become more effective. Second, to reduce the established social gap, low income population demands access to initiatives that not only can provide good education, but can ultimately narrow the gap. In other words, we must build solutions that can rapidly improve education for the ones in greater need and that is not going to come from conventional ideas. We must innovate.

While I think technology plays a crucial role to enhance innovation, I assume innovation as a broader and more impactful paradigm. I see innovation as a mindset focused on solving root problems through new and effective approaches and solutions. They can be high-tech or low-tech, what matters in the end is the impact they can generate on making our society more just to everyone, especially to the ones from low income backgrounds.

The United States invests about 1 trillion dollars in research and education. However, Brazil recently reduced investments in research and education agencies, due to the economic crisis. Taking into account your experience as a researcher and an educator, what will be the impact on Brazilian education and national scientific production?

The impact will be sadly huge. While the Federal Government has launched projects aimed to improve Brazilian education in the long run, such as PNE (*Plano Nacional de Educação*) and *Ciências Sem Fronteiras*, they

have not been able to effectively implement them. The lack of investment in research and education can potentially enlarge the disparity of Brazilian education to developed countries.

Related to research and education funding. Do you believe that the model of own financial funds as a perpetual source of support for universities and laboratories, used by several American universities, is one of those responsible for maintaining excellence in American research despite the international financial crises? This type of financial model began to be implemented in FMUSP with the foundation of Endowment. Could you comment on the perspective of this initiative and its potential?

American universities funding model is a fundamental factor for their leadership on global research. The massive endowment of the leading institutions in the U.S. allow them to play a crucial role not only on the academics but also on other areas, such as politics and business. While they are surely references to universities all over the world, their ecosystem and funding sources - from government budget to independent investments in various business industries - might not fit the Brazilian context.

In this sense, I believe that independent funding structures, that do not depend on government direct support, should be created in Brazil, specially by the universities themselves. It does not mean that the government is not co-responsible for investing and building policies to leverage local institutions and their research. Nevertheless, there are reasons to believe that new sources of funding are either necessary and possible.

On the need side, due to our budget crisis on the national and state levels, higher education institutions must find new ways to sustain and increase their investments. On the possibility side, research and education are a fundamental and clear source of economic growth. Once the institutions and other investors (i.e. development banks, international agencies, private funders, etc.) understand the possibilities of social and economic return over knowledge creation and new inventions (i.e. patents, new products), financial resources may start flowing towards universities. For all that to be possible, legislation and bureaucracy must be reviewed to allow and stimulate other sources of funding, especially in public universities.

There has been much talk about education, new methodologies and technology use. In Brazil's public schools, tablets were made available in classrooms, but the project failed. Many teachers didn't know how to use this type of mobile device. What is your position about the limitations in modern technologies' implementation in the education area? In Brazil, will

the black board be replaced by these new devices?
In my opinion, the dysfunctional use of technological devices in schools is one of many issues of the lack of adequate planning and testing to build new learning experiences. Disengagement from students, low learning impact, waste of resources are among the consequences of badly designed experiences. The old paradigm that classes should be centered on standardized content transmitted by the teacher hides the potential and complexity of building meaningful learning experiences with the use of technology.

Having said that, I do not think that the problems around the effective application of technology in schools relate to technology itself, but the way educational experiences are designed to make use of it. The learning goals, the teaching strategies, the content, the students profile and other factors, must me taken into consideration to properly integrate any new technology to the learning process.

Worldwide, there are online courses to reach large masses like MOOC (massive open online course). On one hand, most students (95%) don't complete the course. On the other hand, it is considered the accomplishment of customized courses according to the characteristics and aptitudes of the students. How can we manage these two extremes?

It is hard not to compare online courses, like MOOCs, with traditional offline experiences. As mentioned, completion rate seems far lower on online courses than offline ones. An initial analysis may lead to blame the digital medium as the main factor for such disengagement. However, there are other aspects that should be taken into consideration. MOOCs are usually free of charge, with no specific timeframe to completion, anyone can subscribe to them and are they are mostly disconnected to any formal degree. With this perspective in mind, what If offline courses, let's say at universities, had these characteristics as well? How would they perform in terms of completion?

It seems clear to me that the issue is not the online experience itself, but the way it is offered and designed. We are in the very beginning of a digital transformation in education, scratching the surface of its potential. Building a great online course has little to do with building a great offline one. We are just starting to learn how to do it. To speed up this learning curve, it is important to approach the design process with an open mind, primarily focused on the expected learning goals, and later on the technology that can help achieve them.

Technological development is evolving in big scale. Despite this, the classrooms are the same as in the last century, and in many educational institutions, the style of discoursive and passive classes with hours of duration

remains the same. As an education specialist, what's the crucial factors that need to be developed to increase the learning performance?

The fundamental challenge to innovate and improve learning performance is not related to technology, but to culture. Our leading educational institutions still understand great education being delivered by experienced professors at traditional schools in a twentieth century classroom model. Filled with well selected and highly engaged students, inefficiencies in the teaching process is hardly noticed. Moreover, structural change in the educational model is not an usual option for them. Well-established and market incumbent institutions have little incentives to lead the transformation we need in education.

In fact, new ideas on how to improve education must be tested and, as any other test, things may not work well at first. In other words, it is essential to embrace failure as the only path to disruption and great improvement. Therefore, innovation in the field has being led by outsiders, new players, such as education startups, that has only one way to succeed, to be greatly different from traditional players. Clayton Christensen from Harvard University explores this idea on his book, *Disrupting Class* (2008).

Ultimately, once we truly focus on learning achievement, freed from traditional paradigms centered on old models of "good teaching" we will start to

progress towards a more effective education at scale.

In 2010, there was an Edtech a boom in the USA. In Brazil, has it already started? Is there any government assistance for this?

Followed by the American EdTech boom in 2010, Brazil has rapidly embraced the movement. Many of the most well-known startups in education were founded between 2011 and 2012 (see attached chart). As pioneers at a complex ecosystem, most of them have not succeed yet on building a large business, but their learnings and achievements have been leveraging many innovations in K12 and higher education, such as adaptive learning, the use mobile devices, the implementation of educational management systems and many others.

Government has not followed this movement. Innovation in public education is sadly behind the private segment. The implementation of education technology at public schools and universities is slow due to the lack of regulation and initiatives in that regard. Nevertheless, some NGOs have played a crucial role to foster the use of technology to improve learning. The Lemann Foundation, CIEB (*Centro de Inovação para a Educação*), *Inspirare Institute* are a few of these players working to accelerate government adoption of educational technologies in the public sector.

Industry recent background

There has been a good hype around education entrepreneurship in the last five years, now concentrated on K12 new EdTech models
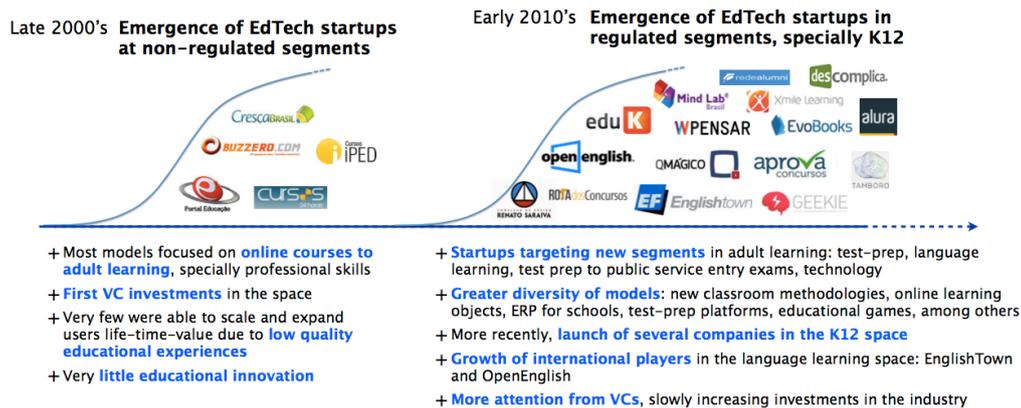
And to finalize: What are the difficulties in advocacy for new teaching methods?

A retrograde culture based on old-fashioned paradigms of what "good education" should be is, in my opinion, the greatest barrier to new teaching and learning methods.

Once methodologies are discussed and evaluated based on learning outcomes and goals, rather than historical references that do not fit the current generation, merit should overcome tradition, and new ideas tend to be more accepted.