

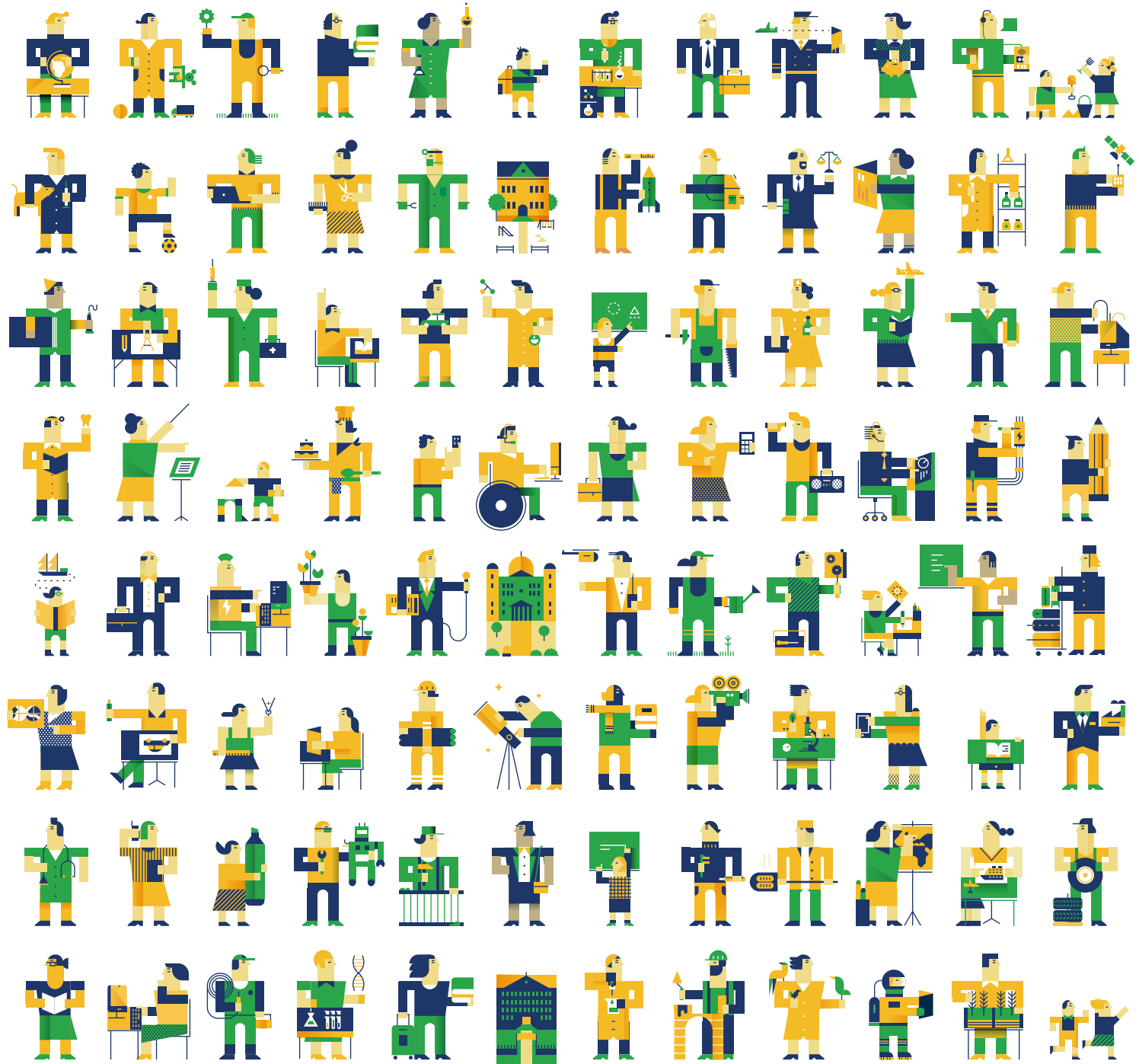
# Education in Brazil

## Laying the foundations for change

As the Dilma administration strives to fuel innovation and growth in the Brazilian economy, the issue of access to quality education is taking centre stage. With a new national plan to boost education expenditure to 10 percent of GDP and a renewed focus by Brazilian academic institutions on collaboration with industry and technology creation, Brazil's education sector looks set to make an important contribution to the nation's future

[theguardian.com/the-report-company/brazil-education](http://theguardian.com/the-report-company/brazil-education)

An independent supplement distributed in the Guardian on behalf of The Report Company, who takes sole responsibility for its content.





1. Students at private university Estacio  
2. SENAI provides formal training for specialised workers for industry  
3. Higher education has become key for young Brazilians  
4. SESC provides education that would otherwise be unavailable for millions of Brazilians  
5. The Ayrton Senna Institute creates opportunities for young people | Photo: Rodrigo Camara  
6. The futuristic Etec Heliopolis in Sao Paulo

# Time for an education revolution

**OVERVIEW** Successive governments have failed to address Brazil's most urgent structural needs. Today, as this young democracy finds its voice, the government is being forced to listen and take action. With the better life Brazilians seek dependent on better education for all, does the country have what it takes to build a better future?

Brazil is shifting awkwardly in the glare of international scrutiny. Where once the government was able to deflect or divert unwanted attention, running from the demands of a challenging reality is no longer an option and popular protests have become commonplace. In response to this, President Dilma Rousseff's second term in office began with a new-look cabinet and the admission that difficult times were ahead, questions would be asked and sacrifices would have to be made if the country was to get back on track. This was an honest self-assessment from a president who had inherited enviable approval ratings from her predecessor Luiz Inacio 'Lula' da Silva, only to see them gradually diminished to a narrow election victory last year. The glow of a vigorous economy has similarly dimmed in recent years as evidence

Education was at last placed on top of the agenda during the election campaign, with a promise to include another 12 million children

Education was at last placed on top of the agenda during the election campaign, with a promise to include another 12 million children

include another 12 million children currently outside of the school system over the next four years. Meanwhile, unemployment fell to a record low of 4.3 percent in December 2014, although productivity is also falling after a meagre 13 percent improvement over the last decade. Ranked 126th out of 183 countries for ease of doing business, Brazil's competitive edge remains severely blunted by bureaucracy. "The World Bank highlighted Brazil as one of the worst countries to do business in, but we are making some dramatic changes", said small business secretary Guilherme Afif Domingos. "We are going to jump from the Middle Ages straight to the digital era." The urgency to make that jump lies in a worrying skills gap pointing to critical shortcomings in the education sector. According to a

survey by global employment agency Manpower, 68 percent of employers in Brazil have experienced difficulty in recruiting the right workforce. While ministers promise to bring the time it takes to open a company down from 150 days to just five, recruiting sufficiently skilled labour is the next hurdle. Historically speaking, when a game-changing solution has been required, Brazilian creativity has shone through. In adapting sugar cane, cattle or the humble soybean to the tropical environment, or developing the means to drill for oil deeper and further offshore than ever before, the country has grown to become a world leader in research and production. The next stage is to go beyond self-sufficiency to adding value at home before selling to the international market. "Maybe Brazil's problem isn't creating entrepreneurs but rather turning innovative ideas into solid technology within a system that is outdated", points out Bernardo Gradim, CEO of the country's pioneering ethanol company GranBio. Already the seventh-largest economy in the world, Brazil has the ingredients to become a fer-

tile ground in which entrepreneurialism, for so long stymied by introverted and protectionist administrations, can flourish, both within and beyond its borders. Today, the country is starting to make deep, far-reaching changes to its saturated consumption-based model in order to progress and fulfil its potential as a global economic force. Brazil's dream of becoming the much-vaunted centre of innovation and technology in the southern hemisphere finally looks within reach. To achieve that dream, however, the education sector needs solutions on a continental scale that successive administrations have failed to deliver. With state investment promising to reach 10 percent of GDP by 2023, the funds are finally available to extend the reach of education, narrow the inequality gap and shape the next generation of Brazil's citizens and entrepreneurs.

**+ VIEWPOINT**

**"Freedom and social democracy were not enough any more. The people needed efficiency too, not only in public services, but also in politics."**

**Michel Temer**  
Vice-president of Brazil



**Preparing for success**

Brazil's workforce is fundamental to its companies' drive for competitiveness, but a culture of undervaluing staff has plagued big companies for decades. The resulting high turnover has had a drastic impact on efficiency and productivity. Multinationals report having to spend up to 40 percent more on HR in Brazil, while the retail sector experiences turnover rates of up to 56 percent. One company, however, is bucking the trend. Grupo Pao de Acucar is the retail group behind some of the country's biggest high street stores. Strong company values and investment in the training and education of their 160,000 employees has paid dividends. Staff turnover is down to 36.5 percent, paving the way for the rest of the sector to follow.

## Productivity in focus

The Brazilian government has been spurred into action as the country's educational performance impacts on its productivity. Over the last decade, workers' productivity in the country

has increased by just 13 percent, compared to 134 percent in China. Whilst the Chinese case might be considered unusual, comparisons with the likes of Chile and Mexico

are only slightly kinder. The average 15-year-old Brazilian student has the equivalent scientific and maths knowledge of a 14-year-old from their Latin American neighbours, an

average 12-year-old American or an average 10-year-old Chinese child. "Functional illiteracy has not dropped in the last ten years", notes Denis Mizne, CEO of Lemann

Foundation. "It should have naturally improved, but it hasn't." Turning around decades of poor basic and high-school education will not be easy, but the enormous scope of

the government's National Education Plan includes better preparing students for university, and giving them the right tools for the demands of the job market.



Centro Paula Souza, Sao Paulo | Photo: Gastao Guedes

### A plan for change

After three-and-a-half years of debate and conjecture in Congress, Brazil's national education plan (PNE) was finally passed into law in July 2014. Its scope is vast, setting 20 targets covering all aspects from pre-school to professional training within a ten-year timeframe, and no fewer than 253 strategies by which to achieve them. Its key proposals include:

#### INVESTMENT

Federal spending on education is to increase from 5.6 percent of GDP to at least 7 percent by the fifth year of the plan and 10 percent by 2023. The difference will be funded by profits from Brazil's pre-salt oil exploration, but the challenge is spending the money efficiently, something not usually associated with the public sector.

#### ACCESS

All children aged four to five will be guaranteed a place in school by 2016, and half of those up to the age of three will be able to attend a public crèche by 2020. The plan will also increase assistance for those with special needs to achieve universal access via improved facilities and training.

#### LITERACY

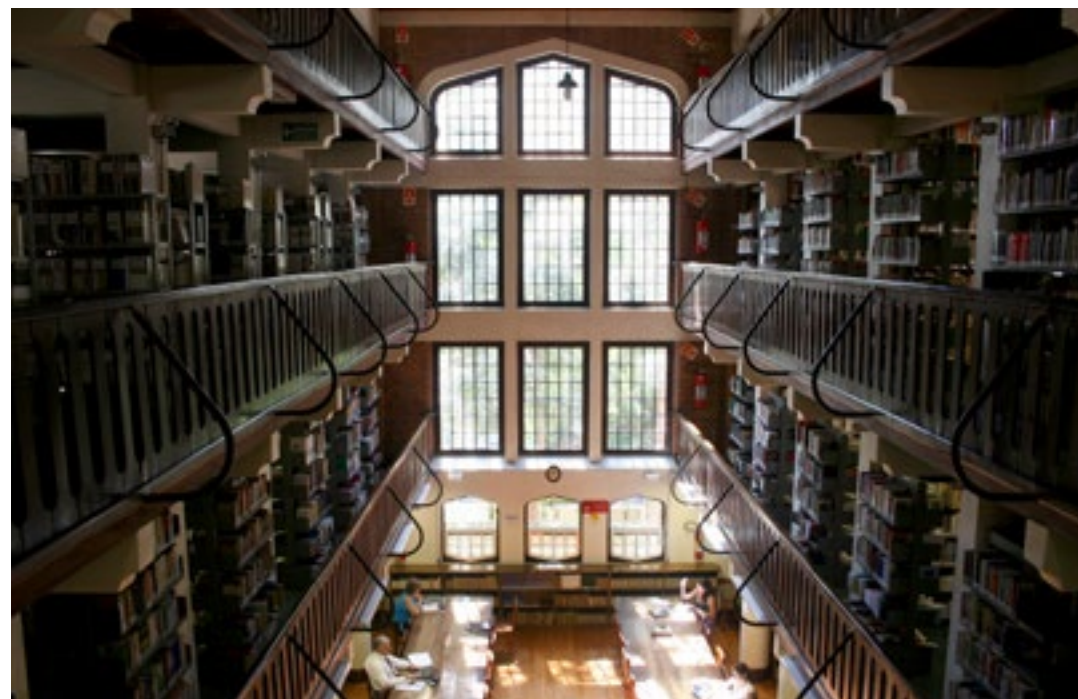
The plan aims to ensure that all children will be able to read and write by the third year of secondary school, and to eradicate illiteracy in those aged 15-plus by 2020. It will also reduce functional illiteracy by 50 percent. UNESCO research shows Brazil has the eighth highest level of adult illiteracy in the world.

#### TEACHERS

The plan will create a national policy for the continued training of teachers and education professionals and will ensure that, by the tenth year, 50 percent of teachers working in primary education will have completed a graduate course in their specialist field. It also aims to increase the average teaching wage to the same level as professionals of a similar level of training.

#### HIGHER EDUCATION

The PNE will seek to enrol 50 percent of 18 to 24-year-olds into higher education and increase those into public universities by at least 40 percent, whilst also ensuring 75 percent of lecturers have a master's degree and 35 percent possess a doctorate.



Mackenzie Presbyterian University library

# Education becomes a priority for Brazil

**POLICY** Education is at the top of the government's agenda with to a ten-year plan to tackle the blight of low-quality teaching, high drop-out rates and functional illiteracy that has plagued the Brazilian system

The Brazilian education sector stands at an important crossroads. For decades regarded as a privilege rather than a right, the recent universalisation of access to basic schooling has been a trying, but largely successful, process. The challenge that the country faces today is ensuring that the quality of education its 40 million children receive from the public school system befits the world's seventh-largest economy.

On the surface, the system's structure is familiar. From the age of six to fourteen, children receive compulsory primary education, moving on to non-compulsory secondary education from fifteen to seventeen. At age eighteen, students can enter higher education. Unlike in the UK and the US, the most highly-regarded universities are public, their tuition entirely free, but access to them is extremely competitive.

It is an awkward paradox that while the Brazilian elite prefer to send their children to expensive private schools, it is to these free universities that the best students invariably go on to apply. Priced out of a good basic education, the majority of Brazilians are then tested out of the best universities, paying instead to attend private institutions with mixed reputations. But higher education remains in its infancy: USP, Brazil's oldest university, was

only founded in 1934. Since the 1950s, Capes, the federal agency for the support and evaluation of higher education, has been responsible for the sector's rapid growth.

The government's national education plan (PNE) set a target of 98 percent inclusion in schools by 2023. To stay on course, however, 2.9 million children need to be incorporated into the system this

**"We have been evaluating graduate courses since 1974 – even the British system was only implemented in the 1990s."**

Jorge Guimaraes  
President of Capes

year alone and the process of universalisation has taken its toll on Brazil's public schools. In order for the plan to succeed, President Rousseff admits it must "converge the efforts of all areas of govern-

ment", or an already stretched education system will be pushed to its limits.

The teaching profession in Brazil has long been undervalued. Without the resources to cope with full-time students, children only attend classes in the mornings or afternoons. The knock-on effects for teaching efficiency are striking, and it is here that the PNE is hoped to make a major impact. Efforts at lowering drop-out rates, improving teacher training and management and expanding higher education all come backed by a major boost in investment between now and 2023, using money from the pre-salt oil exploration programme.

In a country the size of Brazil, with a population of over 200 million spread over 8.5 million kilometres, finding a solution for the needs of those both in the urban centres and in the remote, rural districts represents an enormous challenge.

There is no national curriculum and Sao Paulo is the only state to have implemented a single curriculum across all of its schools. As such, it is difficult to evaluate students and teachers, and continuity in teaching is a challenge. Without the economies of scale offered by a single, countrywide system, the cost of books, materials and technology is also

greater than it could be.

Having fallen behind neighbouring countries like Argentina and Chile in the last century, there is now a great deal to catch up on if the country is to meet 21st century demands, too. Soft skills, citizenship and the basic tenets of punctuality and collaboration all have to be bolted on to the fundamental elements of reading and writing. Functional illiteracy is the frighteningly common

**"With international research, you don't add but you multiply"**

Hernan Chaimovich  
President of CNPq

ailment affecting somewhere between 18-27 percent of Brazilians, and, while the blame for a widening skills gap is regularly passed from the private sector to the universities and all the way down to basic education, it remains an issue that successive administrations have failed to address. In light of the national education plan, it is a problem that, if handled correctly and efficiently, can also bring enormous opportunities.

## BILATERAL RELATIONS

# A research partner for the UK



Glaucius Oliva, former president of CNPq, Chancellor of the Exchequer George Osborne and Jorge Guimaraes, president of Capes at the launch of the £375m Newton Fund

**The UK has overlooked Brazil for decades, but is once again realising the country's potential not just as a market for its goods and services, but as a research partner. A new initiative launched last year looks to strengthen the scientific bond between the two nations**

## A DIPLOMAT'S VIEW



Alex Ellis  
UK Ambassador to Brazil

**Where do you see opportunities for collaboration between the two countries?**

Brazil has extraordinary opportunities. It also has some big bottlenecks, and I think the UK is a country which can help unblock them, particularly around technology and infrastructure. We see that already in oil and gas.

**What is the current mood among investors towards Brazil?**

I think that there are fashions to these things. You have to separate the stock and the flow. The flow is

going to some other countries but the stock of Brazil is enormous and therefore the opportunities are huge. The British firms who stick at it do very well here.

**What collaborations do you see in the education sector?**

Under the government's new Newton Fund, there are post-docs doing joint research with the UK and Brazil. Statistics show that there is an enormous amplification effect for Brazilians who joint publish with a British researcher, more so than with any other nationality.



Photo: Eduardo Cesar

## VIEWPOINT

Celso Lafer  
President of FAPESP

**The Sao Paulo Research Foundation (FAPESP) puts research into practice, acting as a business incubator and helping the state strengthen its position as an important global hub for science, technology and innovation.**

"Half of the knowledge produced by Brazil is generated here in Sao Paulo because the state has such a dense research infrastructure: the three state universities (USP, UNESP and Unicamp), Unifesp, PUC and ITA. Fapesp also has a very strong relationship with the UK, including research councils with Imperial College, Birmingham University and several others."

**The rebirth of distance learning**

Perhaps unsurprisingly given the dimensions of the country, the fastest-growing teaching method today in Brazil is distance learning. Unique in the flexibility of its timetable and its ability to reach the country's

farthest corners, the internet, coupled with government funding schemes, have brought about a dramatic surge in its popularity. The Brazilian Open University (UAB) is at the centre of the growth, gathering resources

from public universities across the country. The UAB remit is to prioritise teacher training, which now accounts for over one third of all course applications, removing learning barriers for educators farthest from

physical institutions. Further support has come from the government's University For All (ProUni) programme, offering low-income families between 50 and 100 percent funding

for distance-learning courses at private universities. The sector's subsequent expansion has seen the private sector aggressively pursuing the market, again bringing the challenge of quality to their

door. With an average 140 students per teacher, distance education providers have to monitor their courses closely and provide a support network to keep students motivated and professors effective.

**1995**  
The first undergraduate distance course in Brazil

# The landscape of Brazil's non-profit universities

**COMPETITION** In the face of growing competition from private universities, Brazil's public and non-profit higher education institutions are having to adapt to a new reality, and their modernisation is bringing hitherto unthinkable opportunities to students from all backgrounds

Brazil's higher education system may still be in its infancy compared to that of the UK or USA, but while there is currently no Cambridge, Oxford or Harvard equivalent, international respect for the country's public institutions continues to grow. The University of Sao Paulo (USP) consistently tops the national rankings and, last year, climbed to just outside the top 50 of the Times Education Supplement's strongest university reputations in the world. Despite having felt a financial squeeze at the turn of the century, the country's best public universities still carry a cachet that makes them untouchable in terms of academic research, but now, more than ever, they need to find efficient ways of using it to impact on Brazil's future. However, the higher education landscape has changed dramatically over the last two decades. Since 1996, a new federal law has paved the way for the current boom in for-profit universities, and nearly three quarters of the 2,416 higher education institutions in Brazil today are pri-

vately owned. Rather than feel threatened, however, public and not-for-profit universities have benefitted from this opening up of the national talent pool. An increase in scholarships to raise student quotas from public schools has had the positive knock-on effect of increased motivation on campus, stimulating both a competitive and determined entrepreneurial streak among a generation that values their education more deeply than ever. "This is the sort of thing that will change this country", says Marilza Vieira Cunha Rudge, rector of Sao Paulo State University (UNESP), who adds that by 2018, the university aims to have 50 percent of its students entering from the public system. "Public universities are maintained with taxes that the whole population pay, so it is our duty to give something back to the people." Beyond the federal and state universities, dozens of private and religious not-for-profit institutions also enjoy strong reputations, the latter

forming the educational foundations of the country reaching back to the nineteenth century. Being church-run means they are afforded an independence to pursue specialisations, as well as being part of a ready-made international network that make them an essential part of the higher education make up. Further agility is enjoyed by those, like the Getulio Vargas Foundation (FGV), that have aligned themselves with the strongest public universities as research hubs and dynamic think-tanks to serve the private and public sectors alike.

**"It is our duty to give something back to the people"**

**Marilza Vieira Cunha Rudge**  
Rector of UNESP

**SAO PAULO STATE'S LEADING LIGHTS**

Brazil's richest city and state Sao Paulo is also home to its three strongest-performing state universities, but those behind USP, UNESP and Unicamp are keenly aware of the challenges they face

**Jorge Tadeu**  
Rector of Unicamp

**How does Unicamp remain relevant?**  
You can only effectively work with new knowledge if you are paying attention to what is happening around the world. Any university that wants to be at the forefront of knowledge must be present the world over. We encourage our researchers, professors and students to seek partnerships throughout the world, and grad students are always pushed to conduct part of their research in other countries.

**What links are there between the university and industry?**  
There are long-lasting partnerships that have developed throughout time, of which Petrobras is the strongest example. We have had a centre dedicated to oil research since the end of the 1980s, built and financed by Petrobras.



**Marilza Vieira Cunha Rudge**  
Rector of UNESP

**How do you harness technology to benefit students?**  
UNESP is a multi-campus university with 34 centres

in 24 cities across the state of Sao Paulo. We can bring all those centres together via videoconferencing. Through technology we also can intensify the participation of researchers overseas within our university with as little cost as possible, and this is a key tool. They can be in their lab and lecture students in our auditoriums, bringing their experience to us at very little expense. We also aim to invest in distance learning. Technology allows a much greater number of students to 'fit' into one classroom.

**Marco Antonio Zago**  
Rector of USP

Brazil's richest and most prestigious higher learning institution, the University of Sao Paulo is the country's seat of learning, producing one quarter of its leading scientific papers and welcoming students from all over the world. None of the nearly 90,000 students pay tuition fees, but admission is strictly via the notoriously taxing vestibular exam. With campuses spread throughout the state and an annual budget of close to R\$5 billion, recent financial difficulties have shown that as well as adopting the private sector's innovative approaches in technology, lessons must also be learned from their management structures if it is to remain Brazil's premier university.



UNESP students are firm believers in the use of modern technology

## Innovating for change in higher education

**MODERNISATION** Brazil's most traditional universities are increasingly aware of the need to modernise to compete with the private sector and international institutions alike

The boom in private universities has forced the traditionally conservative and inert non-profit sector to revise their own structures and methods, embrace technology and open themselves up to greater international collaboration. The likes of USP and UNESP may have built their reputations on pure research, but competition and greater international participation by their students has asked searching questions of even the most revered institutions. "These kids come back from abroad to something they don't recognise anymore", says CNPq president Hernan Chaimovich of the Science without Borders programme. "There, they didn't simply sit for eight hours a day listening to a teacher, they had entirely different experiences that showed they can work better with fewer classes without their proactivity being diminished." More than mere exchanges, stronger international ties can act as a multiplier of knowledge and resources, and such links that are invaluable to help sharpen the competitive edge of non-profit universities. Change can sit uneasily in this conservative world, however, and some professors are wary of new tech-

nology, although Marcio de Moraes, rector of UMESP, believes this need not be the case: "Technology is a challenge that should always be handled with a great level of care. What has helped us is the fact that we started offering distance classes in 2006. Somehow, this process demanded the professors lose their fear of technology." Religious education institutions like the Mackenzie Presbyterian University have also been reinvesting determinedly in their infrastructure to keep up. Mackenzie's rector, Benedito Neto, may be in no doubt that "only a few private universities concern themselves with quality", but while there is little threat in terms of reputation to the traditional universities, their modern approaches nevertheless demand attention.

**"These kids come back from abroad to something they don't recognise"**

**Hernan Chaimovich**  
President of CNPq

**VIEWPOINTS**

The Methodist University of Sao Paulo (UMESP) is a philanthropic higher education institution in the state's industrial heartland, the ABC region. Already enjoying a strong reputation, UMESP is now ready to expand its reach



**"We are engaging with new technology tools that will allow us to last another 140 years"**

**Marcio de Moraes**  
Rector of UMESP



**"We expect to expand from 37 to 103 distance-learning courses by the end of the year"**

**Luciano Sathler**  
Director of distance education and innovation of UMESP

**Ibero-American collaboration**

Universia is the world's largest network of Spanish and Portuguese-speaking universities. Sponsored by Santander Bank, the massive open online course (MOOC) compiles content from 1,345 institutions across 23 countries, making it available to over 18 million higher education students and teachers in a bid to democratise knowledge and enhance social development. With 305 universities, Brazil has comfortably the highest number of institutions under the Universia banner, and Rio de Janeiro held the quadrennial international meeting of Universia rectors last year. Addressing the changing



Photo: Maristela Caretta

demands of higher education and new educational methods, the group's late president Emilio Botin highlighted the need for international collaboration to find answers to the sector's complex future. Botin, whose daughter now pursues his vision, described digital integration as a "challenge of the highest order for universities."

# Global knowledge sharing drives internationalisation



Photo: Daniel Spalato

**Lorraine de Matos**  
General manager of Cultura Inglesa Sao Paulo

## What impact did the Science without Borders programme have on English language teaching in Brazil?

It was a wakeup call for the Brazilian government to the need for higher levels of English. To get into a British university, you have to have a level of English that allows you to understand lectures, analyse, criticise, synthesise, and write academic papers. I am not sure that the government was aware that only five percent of the Brazilian population has a good command of English.

## “Education deserves more attention from all layers of society”

### Is there an immediate solution?

For quality English, you need quality teachers. Recent graduates of the best Brazilian universities do not have the necessary knowledge of English to work for us nor the necessary teaching practice. There is a large gap between the theory and the practice. The government is definitely thinking about this need but unless there is a plan which goes from concept to detailed implementation, it is not going to work.

READ THE FULL Q&A  
the-report.net/brazil

## PERSPECTIVE



## “Our mission is to integrate people in a global environment through the English language”

**Peter O'Donnell**  
President of Brasas

People come back from Science without Borders saying: “I need to learn English” and telling other students to better prepare themselves. Our mission is to integrate people in a global environment through the English language. There is no other language that can do that for people in Brazil. There are no benefits

for English schools and no incentives to grow and help everybody. It depends more on the population recognising that they need English and finding a good English school to learn. Brazilians need to invest their money wisely in education and not choose simply based on what the cheapest option is.

**INTERNATIONALISATION** Recognising the importance of a more global vision and cultural understanding for the country’s students following the government’s Science without Borders programme, Brazil now aims to create strong international knowledge networks



International students at PUC-SP

Interest in the UK, Europe and Asia is on the rise, but traditionally it has been to the United States that the privileged few Brazilian students able to study overseas were drawn. The government’s 2011 Science without Borders programme increased that flow dramatically, but also widened it considerably in ambition. Having witnessed US President Obama’s commitment to send 100,000 US students to Asia, Brazil’s President Rousseff pledged government funds, coupled with funding from the private sector, to provide 101,000 young Brazilians with bursaries to study around the world between 2012 and 2015. Crucially from the Brazilian perspective, these returning students are now far more likely to return to use their knowledge in the private rather than the public sphere, marking a significant shift towards developing global partnerships. Stressing the importance of internships, the scheme emphasised the practical side of learning and the application of knowledge and skills that Brazil’s more theory-focussed higher education still largely fails to deliver. The theory behind Science without Borders comes with strong precedent. Collaboration with the Massachusetts Institute of Technology led directly to the development of national aviation company Embraer, and the revolution in agriculture in the second half of the last century was based on knowledge exchange with US colleges.

The current programme’s most significant challenge was the language barrier. While it was presumed that those most qualified to lead the programme would have an adequate command of English, practical evidence indicated the contrary. The government had to quickly plug the gaps with free, intensive language courses. The planned wave of students overseas became a trickle and what had been proposed as the very essence of President Rousseff’s transition towards a new and vibrant entrepreneurialism and knowledge exchange for Brazil was caught on a very early, highly visible snag. With the issue now addressed, however, the groundwork has also been laid to help Brazilian universities realise their ambitions of welcoming a greater number of international students to their own lecture halls and laboratories. Increasingly aware of the merits of these global partnerships as multipliers of knowledge, resources and, ultimately, the scope of their projects, Brazil will also receive 1,250 British researchers and scholars on inbound fellowships. The second phase is ready to be unveiled with these teething problems addressed. As the process beds in with the recent social inclusion laws for universities, the opportunities for travel and the broadening of horizons for less privileged students are as important as the links being forged between universities themselves.



## Fiocruz and the fight against HIV

Through its INI institution, Fiocruz is at the leading edge of research into the prevention and treatment of HIV, forming part of the HIV prevention trials network (HPTN) and AIDS clinical trials group. Its

highly-trained and dedicated multidisciplinary team has performed pivotal trials that led directly to the ministry of health’s ‘Test and Treat’ strategy, as well as critical research into pre-exposure prophylaxis.

“Fiocruz occupies a very special place between science and technology and health”

Paulo Gadelha, President of Fiocruz



Medical students at Sao Camilo University Centre, Sao Paulo

## Brazil’s health sector reaches out to the world

**COLLABORATION** The new demands of a shifting population and strategic planning for future health trends are prompting the Brazilian health sector to embark on an unprecedented wave of international collaboration

Brazilian health requirements have shifted dramatically over the last half century. Transmittable diseases have been brought under control and life expectancy has risen substantially, but this in itself brings new challenges. Today, the biggest strains on the health system come from chronic degenerative diseases like cancer and diabetes, which require swift, efficient treatment – and greater resources.

As Brazil’s health needs become more akin to those of the UK and North America, increased international collaboration is being sought to help fight disease. Sao Paulo’s Hospital Sirio-Libanes, world-renowned for its cancer treatment, operates a residency exchange with New York’s Sloan-Kettering Centre that also plays an important consultancy and second-opinion role as Brazil’s health sector comes to terms with its new reality.

In a broader sense, the government-run Fiocruz foundation has become a major health think-tank and research centre, fundamental to the national immunisation programme and central to the country’s fight against AIDS. Created in the image of France’s Pasteur Foundation, it is dedicated to tackling global issues as well as Brazil’s own changing disease burden, and the two are creating an international network of laboratories and research exchanges. Focusing on the Amazon, neuroscience and bio-information, it is a potent coupling of two of the world’s most

important institutions of their kind.

Furthermore, diseases like Ebola and influenza inevitably require the kind of multilateral support that Fiocruz is pursuing with the World Health Organisation for the creation of an influenza collaboration centre. The foundation has already been behind the creation of an international association of health institutes to consolidate its work in research, training and epidemic surveillance, underlining its growing global importance in the field.



▲ 1. The Moorish Pavilion or Fundacao Oswaldo Cruz (Fiocruz) Main Building in Rio de Janeiro | Photo: Andre Az  
2. Fiocruz’s laboratories have become a reference for health research | Photo: Peter Illicic

## Q&A



**Paulo Gadelha**  
President of Fiocruz

### How important is international collaboration to Fiocruz?

Health is an especially complex challenge in Brazil because we have a very large, socially unequal population and universal public health. Fiocruz was born in an international context and since the beginning it has promoted exchanges. We have always worked for the country, but we have always been part of the international context, in both science and health. It is impossible to think about scientific and technological development, health and the production base to support it without working in conjunction with other countries. No one ever considers innovating in isolation.

### How is Fiocruz helping Brazil advance in health?

The search for excellence in the interface between science, technology and health is at the core of what we do, and at an international level, Fiocruz needs to be associated with what’s new in Brazil. Brazil produces a significant level of knowledge today, but we are well aware of how hard it is to convert this knowledge into innovation. Fiocruz behaves like a strategic institution of the Brazilian state, like a think-tank for the health field.

### “No one ever considers innovating in isolation.”

READ THE FULL Q&A  
the-report.net/brazil

USF – First place in internationalisation and research in Brazil\*

Be a partner institution.  
usf.edu.br/theguardian

**USF**  
UNIVERSIDADE SAO PAULO

\*Ranked top private university in internationalisation in Brazil and top private university in research in the state of São Paulo by the magazine Folha de S.Paulo magazine



## Research investment brings concrete results

With the help of international companies, Brazil is witnessing strong growth in the number of patents being filed each year, indicating a healthy research environment.

**US\$2.65 billion**

The amount that Brazilian companies invested in research and development last year

**52%**

The proportion of those investments currently spent on product innovation.

**62%**

The predicted level of investments going to be spent on services innovation in ten years' time.

**26,000**

The average number of patent requests per year in Brazil. Around 10 percent are usually granted.



1. Laboratories at UMESP
2. Research at Unicamp
3. Unicamp laboratory
4. Investigation at Unifesp | Photo: Alline Toshi
5. Unicamp classroom

# Bridging the gap between laboratories and industry

**INDUSTRY** The distance between academic research and the productive sector has traditionally been great, but tools are gradually being introduced to help bring the two closer together

Pure academic research may be confined to laboratories, but the product of that labour inevitably needs to find its way to the productive sector in order to bear economic fruit. This relationship has not always been an easy one, but it is finally being tackled not only by universities, but government agencies too. One example of the new links being forged between academia and industry is the research partnership between the Alberto Luiz Coimbra Institute for Graduate Studies and Research in Engineering, or Coppe, with state oil

company Petrobras. In its dozens of gleaming new labs, projects with companies like Shell and OAS are showing the way forward. Part of a growing trend among Brazilian universities like Unesp is the creation of innovation agencies that are showing that research is finally proving profitable. Meanwhile, Sao Paulo's Mackenzie university is investing in a brand new centre in the city dedicated to graphene. In conjunction with the University of Singapore, the potential of the miracle material to change the future of electronics has made it

the focus of huge investment and a new style of inter-university partnership. Unicamp's own agency has provided the tools to allow innovation to thrive, and 15 percent of patents registered in Brazil today come from the Campinas-based university. As the city has developed into a Brazilian version of Silicon Valley, the university has taken up the role of nurturing start-ups, acting as something of an incubator and in turn attracting multinationals keen to keep a close watch on the region. That a university leads the way shows the reluc-

tance of Brazil's productive sector to invest in innovation, as a result of the country's infamous bureaucracy often rendering patents obsolete before having a chance to be fully developed. It is an issue that has led Coppe to create Coppetec and Embrapa to create Embrapatec. These entities act as a bridge to, and facilitate the signing of contracts with, the productive sector in Brazil and overseas with the speed that success demands. That added efficiency allows Coppe, and by extension the Rio Federal University, to concentrate on research and innovation and brings a previously unattainable fluidity to what had been an uneasy relationship.

## + VIEWPOINT

**Hernan Chaimovich**  
President of CNPq

The National Council for Scientific and Technological Development (CNPq) is helping the productive sector become competitive on a world stage.



**"We have to ask the private sector what it needs so that its demands and our research mission are aligned"**

## PERSPECTIVES



**"Sixty percent of our revenue is directly from research, mostly linked with the oil and gas sector"**

**Josafa Carlos de Siqueira**  
Rector of PUC Rio

PUC's longstanding relationship with Petrobras has been central to realising the country's deep-sea oil exploration program.



**"Thanks to the partnership, we are building an advanced research centre on nanotechnology and nanomaterials"**

**Benedito Neto**  
Rector of Mackenzie University

Mackenzie is embracing graphene research with a new dedicated centre and partnership with the University of Singapore.



**"We have solid scientific institutions and publish in respected journals. The problem is the interface with industry"**

**Luiz Pinguelli**  
Director of Coppe

Coppetec is the entity designed to help Coppe negotiate more effectively with the private sector.

# UNICAMP

University of Campinas - Among the world's top 50 under 50

Arts & Humanities; Engineering & Technology; Life Sciences & Medicine; Physical Sciences; Social Sciences

- 23 Teaching and research units (faculties and institutes)
- One of Brazil's most popular universities for undergraduate applications
- Highest average score on the government's evaluation of Brazilian graduate programs
- Top Brazilian university in number of articles per faculty member
- Top Brazilian university in number of licensed patents

Young and innovative



[www.unicamp.br](http://www.unicamp.br)  
Cidade Universitária  
P.O. Box 6194  
13083-970  
Campinas - São Paulo - Brazil

## Unesp: one of Brazil's largest and most important universities

Established in 1976, Unesp is a young university with distinguished achievements in teaching, research and outreach services. With approximately 3,500 faculty members, 7,500 administrative staff and 60,000 students, including professional master programmes, Unesp has become a model multicampus university in Brazil.

Our graduate and undergraduate students are also prepared for the demands of the new global market. Unesp has the second highest number of PhDs per year of any university in Brazil. Its influence is also demonstrated by the spread of its campuses, one in Sao Paulo city and 23 strategically distributed throughout Sao Paulo state. Building on this, Unesp is today more than ever looking for new boundaries to cross and challenges to face by signing new agreements with top quality institutions around the world.

<http://www.unesp.br/international>



**Investment in innovation**

The Brazilian Funding Authority for Studies and Projects (FINEP) is leading the effort to increase innovation and competition in business. Its funding has provided much-needed support to small companies, investing in the

growth of science and technology. "The idea that we can grow by sacrificing salaries or quality is deadly, but sadly it lives on in Brazil's business environment," says former president of Finep, Glauco Arbix. The

authority's budget may have ballooned from R\$2 billion a year in 2010 to R\$11 billion in 2014, but it isn't just about the sums involved – the timeframe for loan approval has tumbled from 450 days to less than 30.

**60%**

The proportion of research investment carried out by the private sector in Sao Paulo – the only state in Brazil where this exceeds the public sector

**R\$60 million**

The amount invested by Brazil's Council for Scientific and Technological Development to help move researchers into companies

# Taking the risk out of innovating



Photo: Orlando Brito

## Q&A

**Mauricio Lopes**  
President of Embrapa

Embrapa's innovation in agriculture is one of Brazil's greatest success stories, helping it become one of the world's biggest food producers.

**How well does Embrapa interact with industry?**

Our goal is to create synergies with the sector, not compete with it. The impact of our cultivars has traditionally been great because industry was not ready, but now companies have come to Brazil and started investing, creating jobs, bringing new technology and investing in innovation.

**What is the next step for Brazilian agriculture?**

We are gradually moving from an economic impact rationale to the three dimensions of sustainability. The economic impact is important, because without profits and revenues, agriculture will not move forward, but we cannot forget the social and environmental side. We now have to plan the next revolution, the verticalisation of production.

**How do you see Embrapa's future?**

Innovation increasingly depends on basic knowledge, and we want to get closer to universities because this represents an opportunity for Embrapa to expand its knowledge base. Synthetic biology, for example, will certainly cause ruptures. When the UK can produce a steak in a petri dish, we need to think what that means for a country with 200 million head of cattle. When will that rupture happen? This way, we are preparing for it.



GranBio was the first company to produce second-generation ethanol in the southern hemisphere



The Financing Agency for Studies and Projects (FINEP) is setting out to do for Brazilian innovation what BNDES did for the country's infrastructure

**INNOVATION** When innovation is unattractive to industry, it cannot thrive, but through grants and agencies the government is creating the conditions to allow risks to be taken

For every 1,000 researchers employed in Brazil's productive sector, only five patents are registered per year, compared with 29 in the UK and 41 in the US. While some areas of Brazilian industry have seen innovation flourish, the disparity between scientific knowledge and its benefit to the population is great. Pre-salt oil exploration, soy development and the agricultural boom aside, for the most part, the venture capital hasn't been as available in Brazil as it has in the US and Europe.

Over the last decade, government agencies have had to fill this gap. The Financing Agency for Studies and Projects (FINEP) is setting out to do for Brazilian innovation what BNDES did for the country's infrastructure, providing much-needed funding that has already amounted to the accumulation of some R\$15 billion in assets. It is now the fifth-largest state-controlled lender in the country, discussed in the same breath as Banco do Brasil and CAIXA, and destined to become an autonomous national innovation agency. The small, dynamic companies it seeks to support remain relatively few in number, but are gradually

emerging. Finep's budget ballooned from R\$2 billion in 2010 to R\$11 billion last year, all destined to stimulate tech and start-up firms. Its funding application process timeframe also tumbled from 450 days to just 30, proving immeasurably more attractive to those needing to stay at the cutting edge of innovation.

The Sao Paulo Research Foundation (Fapesp) has also been providing stimulus through its Innovation Research Into Small Companies (PIPE) grants for research that small companies would otherwise not afford. At the other end of the scale, Fapesp has also been involved in multi-million dollar joint ventures with the likes of GlaxoSmithKline and Natura, in the fields of sustainable chemistry and wellbeing respectively. Like CNPq, the overarching goal of all of these entities is to create conditions for research that will bring significant social and economic impact on the country. Events like Fapesp Week in London are helping Brazil enter into international debates on research and the global science community is taking ever more notice of the priority it is being afforded.

## PROFILE

### GranBio

GranBio is the pioneering Brazilian biotech company behind a green revolution looking to transform the country's abundant biomass into renewable energy and biochemicals. Two years after its creation in 2011, GranBio was already being named among the most innovative companies on the continent, both in terms of its product and its structure. Biofuels already account for nearly 20 percent of Brazil's energy make-up, and GranBio has seized upon the potential for converting cellulose into sugar and then into 'second generation' ethanol. The company's CEO Bernardo Gradin expects the process to bring about a 50 percent increase in ethanol production, without the need for more planting of sugarcane. Following experimental planting in Bahia, GranBio announced the start of operations at its US\$265m second-generation

ethanol plant in Alagoas state at the end of last year. The first of its kind in the southern hemisphere, its construction is a major step on the road to Brazil realizing its huge biomass energy potential. Brazilian farmers sought to grow the cane that produced the most sugar rather than the most cellulose, but GranBio's new 'energy cane' harnesses the country's impressive photosynthetic efficiency to yield three times as much biomass. BNDES invested in the first GranBio plant and is a minority stakeholder, while a partnership with Rhodia, part of Belgium's Solvay group, is already in place for the production of N-butanol, but the future is even brighter. By controlling the production chain from start to finish, Gradin's goal of creating biofuel competitive with hydrocarbons could revolutionise the energy mix not just in Brazil, but around the world.



**"The spirit of the company mixes the magic of innovation with the discipline of entrepreneurs"**

**Bernardo Gradin**  
CEO of GranBio Investimentos SA



GranBio sugarcane straw collection

## Responding to climate change

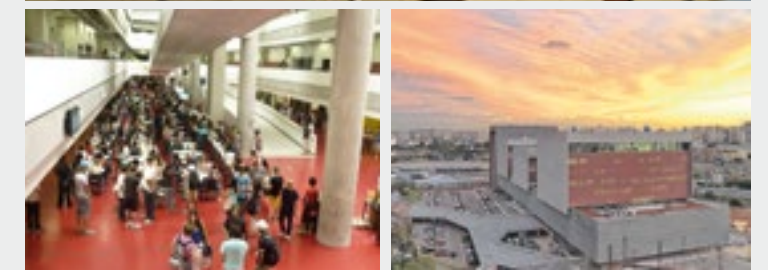
A clear indication of Embrapa's desire to align with the country's universities is a pioneering partnership with Unicamp in response to the changing environmental reality in Brazil and around the world. The cooperation agreement is centred around genetic and biotech research into developing crops better suited to the changing climate. Creating genetically modified

strains more resistant to pests as well as extreme weather, and predicting the challenges that changing climate patterns will bring, are essential to preventing future food crises. As well as involving up to 80 scientists, Unicamp students will be encouraged to experiment in the search for new products that could shape the future food needs of the country.

## CASE STUDY

# The Federal University of ABC (UFABC)

President Lula may have drawn much of his power base from the unions he represented in local industry, but in the creation of the ABC region's Federal University he has paid back that loyalty. Shaking off the image of closed-off laboratories, conservative approaches and reluctance to change, UFABC is proving the shining example of what public higher education in Brazil can become



UFABC campus in Santo Andre | Photo: A. Arnoldi

Deep in Sao Paulo state, the ABC region has been an industrial powerhouse for decades. The home of Brazil's car manufacturing industry, the creation of the country's newest federal university in 2004 brought the towns of Santo Andre and latterly Sao Bernardo do Campo onto the world's higher education stage. The only university in Brazil where all of the professors hold PhDs, it is also the only one whose scientific publications have an impact factor above the world average. UFABC has been a pioneer in social inclusion on its campus, too, setting aside 50 percent of its places to minorities before this became a legal requirement, and showing that diversity and excellence can go hand in hand. Now it is seeking to further develop its relationship with local industry, not just through research partnerships but internships and, ultimately, by hiring world-class graduates. Its ambition is not confined to this

corner of the state, however. In the last few years, Folha has recognised its efforts at internationalisation, placing it number one in their rankings, thanks in no small part to its active participation in the Science without Borders programme. Beyond that, however, there is a commitment to reinvesting in the structure and staff, making funds available to send students and professors on international congresses and training courses. In UFABC, the government has shown that federal universities can be the progressive institutions that the country needs them to be, embracing inclusion and local industry at home whilst reaching overseas to share knowledge and experience.

**UFABC is the only university in Brazil where all of the professors hold PhDs**



## Q&A

**Dr Klaus Capelle**  
Rector of ABC Federal University (UFABC)

**How important is innovation to the future of UFABC?**

We encourage our professors to file patents and we have a unit dedicated to inventors and innovators. We are already seeking private sector partnership for several patents because it is something that we believe in and that companies are starting to see the benefit of, too.

**What is UFABC's approach to internationalisation?**

We have an entire unit dedicated to international relations and we actively encourage our professors to seek international partnerships. A substantial portion of our resources are used to enable our students and professors to participate in international congresses, more than most universities, and we invest greatly in the training of our technical staff for international relations.

## PERSPECTIVE

Professor Rodrigues has been a pioneering figure in Brazilian higher education since the 1960s. Recognising the value in vocational subjects long before they were fashionable, he introduced non-traditional courses like tourism and fashion, but always dreamt of creating

the world's biggest university. Going on to oversee the merger of Kroton and Anhanguera in 2013, which brought together two of the biggest education groups in the country, he did just that, creating the world's largest for-profit education company by market capitalisation.



**"You can't worry about your competitor. You have to worry about your competitiveness."**

**Gabriel Mario Rodrigues**  
President of ABMES



## Education versus profit

The sharp rise in university places over the last quarter of a century has largely been thanks to the private sector, but the argument that this represents opportunistic profiteering is only now being put to rest. The higher education mass market is buoyant, and though the wave of acquisitions has rung alarm bells, the sheer demand – and its immediacy – would render such growth impossible if left to the public sector. Scale was always the government's major stumbling block, but this is university education for the masses. Consolidation has meant profits, but also private-sector efficiency, and competition will always be strong enough to mean that companies like Kroton and Estácio will have to pump money back into their structures in order to build the reputations they crave.

**The sheer demand would render such growth impossible if left to the public sector**

# The rise of private universities

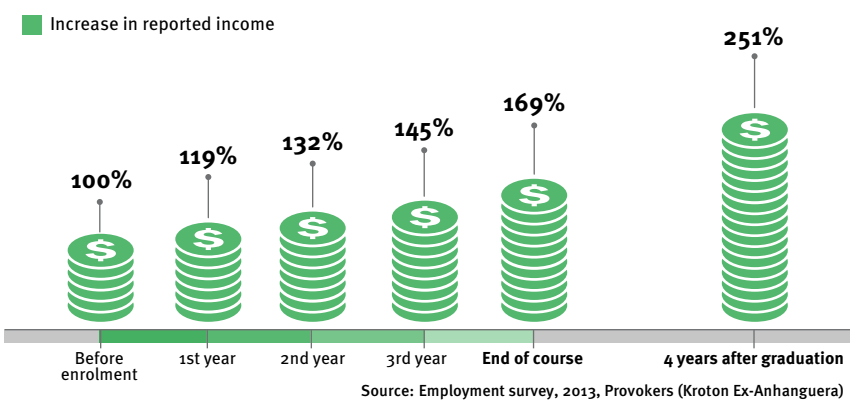
**PRIVATE SECTOR** The long-running argument over private sector involvement in higher education is slowly dying out as the new breed of universities brings education to Brazil's demanding masses for the first time

In 1968, in a bid to modernise Brazil's rigid, modest higher education sector, the government issued a much-needed reform of universities to ease the process of inaugurating new courses. There was an implicit understanding that, without private sector investment, a crisis in the population's educational development was inevitable. Throughout the next decade, large private groups like Uniban and Estácio emerged onto the market, but even so, in the 1980s, enrolment into university didn't even keep pace with population growth and the burden of the past remained. It was only in the mid-1990s, when the law was liberalised to allow private entities to profit from education for the first time, that the democratisation and privatisation process of the sector began. There followed the provision of grants and bursaries that saw increasing places and interest from private investors. As money flooded the sector, it was suddenly able to innovate, react to the changes in technology in a way that public universities could only dream of, and, as acquisitions and mergers consolidated the sector

yet further from 2007, bring an entirely new economy of scale to higher education.

These new universities saw the traditional institutions as bloated and inefficient, overly focussed on research and out of step with the demands of the 21st century. In response, private universities were accused of prioritising quantity over quality, but while the sudden mixture of backgrounds and abilities has proved challenging, there is a clear pattern towards a greater diversity of graduates entering the job market better prepared than ever before, and that can only benefit Brazil.

## IMPACT OF HIGHER EDUCATION ON STUDENT INCOME



▲ According to research carried out on behalf of Kroton, the number of years spent in higher education has a marked impact upon the income of students in Brazil



Photo: Liz Guimarães

## Q&A

**Rogerio Melzi**  
CEO of Estacio Participacoes

**Rogerio Melzi is the CEO of Estacio Participacoes, one of Brazil's largest higher education institutions. Operating across 20 states, it deploys a unique blend of management tools and international collaboration to get the best from both its students and teachers.**

**How healthy is Brazil's higher education sector today?**

We jumped from around one million university students in 1999 to more than seven million today. It's a clear improvement, and it is largely thanks to the private sector which accounts for around 75 percent of university students. This in turn has attracted entrepreneurs who have either created new universities or expanded old ones, greatly increasing supply. The problem is that while the number of places has increased,

the quality hasn't, and we cannot wait to address that.

**How do public and private universities complement each other?**

Public universities have a very important function and it is they who will be pushing the boundaries of science and who have to be our Oxfords and Cambridges. They receive a lot of investment, and, on average, our most important engineers and the CEOs of the country's largest companies have studied in them. The Brazilian pyramid has a large middle, however, and someone needs to take care of these millions of Brazilians, those with high school diplomas but no college diplomas. Public universities will not do that because it would be extremely expensive and they do not have the necessary skills. We do.

**How innovative is the university?** Innovation has been in Estacio's DNA ever since its inception and it was here that the idea of bringing higher education to the underprivileged was born, of having campuses in poor areas, of having classes late at night and during the summer recess. We had 8,000 teachers in 20 states acting independently, and now we have a knowledge management system where each class has been discussed at length and standardised, as well as learning analytics giving us valuable information on our students' performance.

READ THE FULL Q&A  
the-report.net/brazil

## PERSPECTIVE

Since Eda Coutinho founded Brasilia's IESB University in 1998, she has ensured the institution continues to espouse the key ideals of innovation and citizenship in its teaching philosophy. Now comprising three campuses and some 18,000 students, this young university has built a reputation based on quality.



**"We don't target numbers, we target quality"**

**Eda Coutinho**  
President of IESB

# Technology, flexibility and the future of higher education

The agility of the private sector is likely to create an unrecognisable future for the mass education of Brazil's youth over the next decade

Today, more than 2,000 private institutions represent around 75 percent of Brazil's university places, but while there is arguably room for more consolidation, a period of reassessment has followed the initial flurry of activity. Earlier this year, the tightening of the rules for students to qualify for the government FIES student loans programme has altered the future landscape for private universities. The introduction of a minimum score in the compulsory Enem test will have a major impact on the numbers of students receiving help to attend fee-paying universities.

As ever, though, the sector has responded quickly, and Kroton is already looking into creating its own private funding scheme, displaying clearly the sector's strength. With private universities taking a more methodical approach to higher education and preparing students for the jobs market, technology is their ally. Management tools are being deployed to measure teachers and students alike in everything from over and under-performing courses to salary trends for graduates. For students, clearly seeing the correlation between receiving a loan, studying and the salary and career path they are likely to then follow after graduating,

this offers a future many never thought they could achieve.

This ties in with a revolution in the teaching-learning process which is increasing the relevance of the new institutions and to some extent alienating the old. Companies like Geekie can offer educational platforms that will bring more relevance and greater engagement for students. The deeply-filled shelves of federal university libraries are no longer the grand source of knowledge they once were, and whether through distance learning or in laboratories, above all it is the private institutions that have the necessary fluidity to rapidly assimilate, and in many cases create, these new platforms.



Distance-learning students at Estácio



## Q&A

**Rodrigo Galindo**  
CEO of Kroton

**Kroton Educacional became the world's largest educational company when it merged with Anhanguera in 2014. CEO Rodrigo Galindo has devoted his career to managing educational institutions, and sees the current growth in the private education sector as critical to the future success of the country.**

**Is the idea that the private sector seeks profits over performance a thing of the past?**

No, but it is much less prevalent than it was. When we established the first commercial department of a higher education institution, it was considered a

sin to 'commercialise' the service we provided, but little by little we broke down those barriers.

**What needs to be done to change perceptions about private sector participation in the education sector?**

Private universities need to respond with high-quality education and show society that they are part of the solution, rather than the problem. It is unrealistic to expect an increase in penetration purely through a public system. Studies show that those students cost between seven to 10 times more than private ones, so the training of the masses cannot take place through the public sector.



**Innovation is in our DNA**  
We offer cutting-edge programmes in creative economy on campus and online.

Information:  
www.iesb.br  
reitoria@iesb.br



**Our mission is to care for lives**

61 hospitals, 13 educational units and 31 social units  
www.saocamilo.br



**Dreams transform lives. Education as well.**

Estácio understands the value of a dream, and because of this we have invested in quality education in Brazil for over 40 years, helping people to take their life projects forward.

Both in on-campus courses and in distance learning, Estácio offers free educational material, with content from only the best books, and sends students to over 30,000 companies.

Our mission is, through education, to help people transform their dreams into success stories.

**Our life is to transform yours.**



www.estacio.br



## Professional development and the surge in vocational training

**VOCATIONAL EDUCATION** As the Brazilian service sector expands, a precarious drop in the country's productivity has forced the government to invest billions in vocational training

A study from the Institute of Applied Economic Research (IPEA) shows that, despite soaring wages, Brazil's productivity has dropped by 15 percent during the last 30 years. Meanwhile, in that same period, Chile's productivity has increased by 88 percent and China's a massive 808 percent. The economic impact on Brazil of this disparity is disastrous, and the government now has to overcome a severe human resources burden inherited from the end of the last century. Fundamental to that will be the performance of the growing service sector, which the country needs to be both strong and innovative to help prop up declining manufacture. To some extent, the tools to do so are already in place. Brazil's so-called S-System is the largest consolidated professional training network on the continent. Arranged by sector and funded via a tax levied directly on companies, it offers both professional advancement training and courses for those out of work. The challenge now is adapting this network, created in the 1940s, to the demands of the 21st century. The National Service for Commercial Apprenticeship (SENAC) operates in the commerce and services sector. Created in 1946, it has since trained over 40 million workers and helped turn the service industry into a well-respected and skilled profession. Combining distance and on-site learning, SENAC is making a nationwide push for standards to be equal in all states and to diminish regional inequality, even using mobile classrooms to bring its commerce-facing courses to the masses. "Our programme combines theory and practice, and the knowledge, values and skills are focused on problem solving so there isn't much difference between the classroom and the practical side", says SENAC director general Sidney Cunha. Created four years earlier, the National Service for Industrial Apprenticeship (SENAI) played a

crucial role during the 1980s as the Brazilian economy struggled to come to terms with new technology. To build on these strong foundations, in 2011 the government introduced Pronatec, a multi-billion-dollar investment to help the S-System reach yet further into Brazil's hinterlands. As for the urban centres, Sao Paulo's Centro Paula Souza has received significant government funding to support the 'Fast Track to Work' programme. This trained 90,000 people last year alone, and also offers an array of free courses open to anyone who passes the rigorous entry exams. Coupled with FIES for university applicants, it represents another large step in the government's democratisation of education.

**"Our programme combines theory and practice"**

**Sidney Cunha**  
Director general of SENAC



### INDUSTRY

The huge gap in productivity levels between Brazil and countries like the US and UK is at a critical stage. With new technology flooding the market, training has never been more crucial, but only six percent of young Brazilians elect to study technical courses, compared to an average of 50 percent in more developed countries like Japan and Germany. In response, SENAI introduced the Innovation Network in 2014 and has already passed R\$100 million in investments in innovation-led projects. It has dedicated a further R\$300 million to a competitiveness initiative, itself further bolstered by R\$1.5 billion from BNDES to be spent on new technology institutes as well as new schools.

Photos: SENAI

### INDUSTRY VOICES



**Sidney Cunha**  
Director general of SENAC

"The government established Pronatec and the number of students in vocational education has since doubled, reaching a strata of the population that could not afford it."

**"Professional education is intrinsically linked to employability, especially in the more specific technical education slot"**



**Rafael Lucchesi**  
Education and technology director of SENAI

"There needs to be a balance in our education matrix, increasing the number of students taking professional education, currently at less than 8 percent."

**"Technical and technological training has gained ground because the market is increasingly valuing these professions."**



### SERVICE SECTOR

As the service sector occupies an ever more important role in Brazil's economy, its efficiency and efficacy is brought ever further into the spotlight. With productivity currently standing at one-fifth that of the US and a quarter of Germany, there is plenty of ground to be made up, but there is simply no short-term solution. This is part of a trend that has become embedded in the workforce, but the government is investing in its permanent removal. The rise of a consumer class has put further pressure on the service sector, which needs greater reinvestment and innovation to keep up. SENAC has provided a crucial lifeline, using the government-funded Pronatec initiative to double the number of courses on offer and respond much more closely to the demands of industry. As new technologies bring ever more acute niches to the globalised economy and demand ever-greater productivity, SENAC has a central role in training Brazilians not just to be a part of the sector's future, but to shape it.

Photos: Gastao Guedes-Centro Paula Souza, SENAC, FMU



**Q&A**  
**Robert Bittar**  
President of the Escola Nacional de Seguros

**Brazil's National Insurance School was founded in 1971 to encourage research into the industry. Today its role has expanded, producing essential statistics with international partners on subjects ranging from road accidents to climate change, so that more sophisticated products can be offered to minimise the 'Brazil risk'.**

**What has changed in the insurance market in recent years?**  
The rise of a middle class in turn leveraged the insurance industry. When families have stable jobs and higher incomes, they start planning better, which stimulates long-term savings, life insurance and private pension plans.

**"I believe that schools should help students find a place in the market"**

**How has the school's role changed?**  
We have to play the role of providing information for the market and investors as a whole so they can evaluate it effectively. We want the school to serve as an information centre.

**Are there enough trained professionals to sustain the sector's growth?**  
The Brazilian market has great professionals. The only reason we are lacking is because of the rapid expansion of the market and the effects of under-investment in human resources at a time when growth was much lower.

READ THE FULL Q&A  
[the-report.net/brazil](http://the-report.net/brazil)

### Unlocking the hinterlands

For federal education programmes to serve the entire country, innovative solutions are required. And with previously overlooked, unimaginably remote regions in the Amazon and the Pantanal, this continent-sized country needs out-of-the-box thinking to avoid educational blind spots. Enter SENAC's 78 *carretas-escolas*. Literally translated as 'school trucks', these mobile classrooms offer cutting-edge laboratory conditions, on-line computer suites and audiovisual equipment within a 36-metre-square

space to bring courses in IT, health, tourism and even wellbeing to the farthest corners of the country. Like SENAC, SENAI also has a two-storey *balsa-escola*, or floating school, that serves communities along the Amazon River. The boat offers courses as diverse as bakery and mechanics, bringing new skill sets to a population for whom vocational training and the opportunities it brings would have previously been impossible. SENAI's itinerant professional training has certified over 50,000 students



SENAI's floating school and a SENAC school truck



from riverside villages, helping to elevate the wages and living standards of many more.



Faria Lima Avenue in Sao Paulo | Photo: Jose Cordeiro/SPTuris

# Sao Paulo: Land of innovation

The state is investing heavily in training and logistics to create the southern hemisphere's newest breeding ground for technological start-ups. In this new fertile environment, small and mid-sized companies look set to flourish



▲ Located in Brazil's south-east, the state of Sao Paulo, the country's most populous, is divided into 15 administrative regions, of which the metropolitan region of Sao Paulo is its most economically important. The state currently has 218 ETECs (state vocational colleges) and 63 FATECs (state technological colleges)

Sao Paulo state's contribution to the economic map of Brazil is phenomenal. Representing almost 40 percent of the country's GDP, it has an output equal to Switzerland and the weight of the nation on its shoulders, but it has also been underperforming. The focus now is on supporting previously overlooked mid-sized companies to uncover the star of tomorrow. Hopes are high that Sao Paulo can create a Facebook or Google of its own to underscore its efforts in boosting entrepreneurial creativity.

The explosion of investments over the last decade in vocational training, the creation of major new institutions like UFABC and the rise in

distance learning have all helped decentralised the knowledge base from the main metropolis. Today, smaller companies are just as likely to look to the interior of the state, where there is an increasingly skilled workforce, improving infrastructure and world-class logistics.

The vital interplay between research, private investment and government support is becoming easier thanks to its prioritisation by agencies like Fapesp and Investe Sao Paulo. The latter, created in 2008, is responsible for facilitating investments in the state and helping boost exports. "Sao Paulo represents the best of Brazil in terms of technological innovation and products



**Under Governor Alckmin, the number of technical schools (FATECs and ETECs) in the state of Sao Paulo has seen rapid growth over the last decade. The Centro Paula Souza is at the heart of these massive investments, offering flexible, free courses to a varied demographic.**

**What is the role of the Centro Paula Souza in the development of the state?**

Our main goal is professional training, which we do at on all levels from basic training to secondary schools and higher education. At a higher-education level we have our quick courses, called 'initial and continuous training', and 100 and 200-hour courses, which are

in high demand. Our schools offer courses that are very much in-line with the job market.

**How popular is this kind of vocational training?**

Sao Paulo state has the largest network of technical schools in the country. The secretary of economic development, science, technology and innovation hired us for an initiative called Via Rapida para o Emprego (Fast Track to Work) and in 2014 alone we trained around 90,000 people in different areas thanks to our mobile labs. Both the federal and the state governments have been investing in it heavily, and there has been great demand.

**Who is your demographic and how**

**successful are your students?**

We train everybody from construction workers to automation specialists. At night, people come who have finished high school and who work during the day. They come here and after 18 months to two years, they leave with a professional degree. Thirty-seven Paula Souza schools were among the top fifty institutions in Brazil for the national secondary entrance exam (Enem). Our image is built on such results, as well as the fact that our students go straight into the job market easily.

READ THE FULL Q&A  
the-report.net/brazil

## Q&A

Laura Lagana  
Director of Centro Paula Souza

## + VIEWPOINT



**"Sao Paulo was always a leader and will be again because there's no parallel to the economic strength of this city"**

Fernando Haddad  
Mayor of Sao Paulo



▲ Investors talking with Governor Alckmin, Juan Quiroz from Investe Sao Paulo and Vice Governor Marcio Franca | Photo: Eliana Rodrigues

with aggregated value," says Juan Quiros, president of Investe Sao Paulo, "but efficiency needs to improve. We need not look at the future of Brazil but build the present".

To that end, under the state's present governor Gerardo Alckmin, investment in the Sao Paulo Technology Faculty (FATEC) has boosted the number of units throughout the state from 16 in 2004 to 63 today. State investment in its headquarters, the Centro Paula Souza, also rocketed from R\$252 million to R\$1.8 billion in that same period, allowing these FATECs to offer broad as well as niche courses focussed on the market's needs.

The rise in student numbers is in sharp contrast to the prevailing opinion that such courses are no longer relevant to students. "Regular education

doesn't motivate them. They need training that is relevant to their reality, that is organised, safe and connected," says Laura Lagana, director of the Centro Paula Souza. "Since we have more students than seats, candidates have to be selected, so they have to study to get in. If they have to study, it means they really want it."

The state also helped fund the centre's schools in two of the poorest suburbs in the city of Sao Paulo, Heliopolis and Paraisopolis, as well as creating the Neither/Nor initiative to give training opportunities to underprivileged and vulnerable

youth. Offered basic courses in tourism, culture, road safety and first aid, they have the opportunity to become 'municipal coordinators' under the employment of the state. It is progressive measures like these that underpin a concerted effort to reach Sao Paulo's huge and varied demographic.

**"Sao Paulo spends 1.6 percent of its GDP on research, the same as some European countries"**

Celso Lafer  
President of FAPESP

Postdoc and young investigators **opportunities** in Brazil

**FAPESP**  
SAO PAULO RESEARCH FOUNDATION  
[www.fapesp.br/en](http://www.fapesp.br/en)

Fifty percent of all science created in Brazil is produced in the State of São Paulo. The state hosts three of the most important Latin American universities: Universidade de São Paulo (USP), Universidade Estadual de Campinas (UNICAMP) and Universidade Estadual Paulista (UNESP). Other universities and 19 research institutes are also located in São Paulo.

The São Paulo Research Foundation (FAPESP), one of the leading Brazilian agencies dedicated to the support of research, has ongoing programs and support mechanisms to bring researchers from abroad to centres of excellence in São Paulo.

The **Young Investigators Awards** program is part of FAPESP's strategy to strengthen the state's research institutions, favouring the creation of new research groups. See more about it at [www.fapesp.br/en/via](http://www.fapesp.br/en/via).

FAPESP **Post-Doctoral Fellowship** is aimed at distinguished researchers with a recent doctorate degree and a successful research track record.

The fellowship enables the development of research within higher education and research institutions in São Paulo. Postdoc fellowships are available when calls for applications are issued internationally, or as individual fellowships requested on demand.

In the first case, positions are advertised at [www.fapesp.br/opportunidades](http://www.fapesp.br/opportunidades) and candidates are selected through international competition. In the second, the proposal must represent an addition to a pre-existent research group and should be developed in association with faculty in higher education and research institutions in São Paulo. More information at [www.fapesp.br/en/postdoc](http://www.fapesp.br/en/postdoc).








Rua Pio XI, 1500 • Alto da Lapa • 05468-901 • São Paulo, SP – Brazil • Phone: +55-11-3838-4224



Sao Bernardo from the air

# Transforming Brazil's industrial heartland

The third-largest industrial centre in Brazil, the ABC region is developing beyond its car-manufacturing past and into the realm of a high-tech hub



The Greater ABC Region, made up of the cities of Diadema, Sao Caetano do Sul, Santo Andre, Maua, Ribeirao Pires, Rio Grande da Serra and Sao Bernardo do Campo, is in the south of the metropolitan region of Sao Paulo, and has become a powerful industrial centre

The Brazilian government could be accused of a somewhat passive approach to manufacturing and innovation in the past, but the ABC region of Sao Paulo is becoming a beacon of proactive policy. The cities of Santo Andre, Sao Bernardo do Campo and Sao Caetano do Sul have enjoyed mixed economic success over the last 30 years, but a recent wave of public and private investment means that the Greater ABC region is once again acting as an autonomous hub with very much its own agenda and appeal. Located between Sao Paulo city and the port of Santos, there is more than geographic advantage and a strong industrial history

behind the region's success. Studies by Fiesp have shown the huge impact of companies like Volkswagen as they are drawn to the area's evolving infrastructure, in turn creating manufacturing clusters as support companies move in. It is something that the Intermunicipal Consortium, the entity that has represented the seven municipalities and 2.7 million inhabitants of the Greater ABC region since 1990, has been communicating to state and federal bodies in a bid to modernise and develop the area's potential. The consortium's strength lies in its diversity of vocations, but it is a diversity being funneled

## ABC REGION Automobiles and aerospace

The ABC's ambitious target of moving from Brazil's automobile epicentre to becoming the country's aerospace hub received a major boost from Saab, leading to a study from the Economic Development Agency to analyse its potential. The Greater ABC region currently has 28 companies that operate in the aerospace field, the majority of which are found in Sao Bernardo do Campo. "One of the conditions of the contract for Brazil's new Gripen jet was that Saab build a unit in Sao Bernardo do Campo", says the city's mayor, Luiz Marinho, "and that has in turn been attracting a lot of new companies."

These are precisely the kind of high-impact projects that the Intermunicipal Consortium is trying to attract and that would cement the industrial future of the area. It is a complex production chain, however, for which investments dwarfing those already poured into the region would be required.

Photos: SENAI



**"We are an innovative region in every sense"**  
Luis Paulo Bresciani  
Executive secretary of the ABC Intermunicipal Consortium

Through the Intermunicipal Consortium, the seven municipalities of the region, each with their own identity, can act as one.



**"Before everything, we train our students to think like entrepreneurs"**  
Jose Carlos de Souza Junior  
Rector of the Maua Institute of Technology

EDUCATION

The Maua Institute in Sao Caetano places the emphasis on practical learning with its ultra-modern laboratories equipped with the latest technology.

As published in **the guardian**

through one overarching strategy representing all of its members. The mayor of Sao Bernardo, Luiz Marinho, has long held positions of influence in the local unions, but through his presidency of the consortium in 2013-2014 and still now through his vice-presidency, he helped align the Greater ABC's ambitions with those of the federal government. "My main focus is always Sao Bernardo," says Marinho, "but I also have the job of leading communications not only between the other mayors in the region, but also with the state and federal governments. The goal is to produce a regional strategy, not several city strategies." The potential of a skilled workforce and burgeoning research partnerships is largely thanks to the continuing growth in the number of FATECs and the impressive new UFABC university. Their presence has paved the way for the arrival of companies like Saab, currently building a R\$150 million plant in which the Swedish company will piece together Brazil's 36 new Gripen fighter planes. Other companies, such as Germany's robotics giant Kuka, have been enticed away from metropolitan areas by the ABC's impressive differentials. Such arrivals have also given an added impetus to reinvestment in private universities like the Maua Institute of Technology. The Sao Caetano campus

will get a R\$15 million facelift in the form of new laboratories for courses including engineering, microbiology and biochemical engineering. There are limits to the region's autonomous ambitions, however, and while the municipalities can apply for loans from BNDES, the consortium as a whole cannot. But if an investment does not fit one municipality, the fact that each one follows its own vocation means that there is invariably another close behind ready to pick up the negotiations. With companies like Mercedes Benz investing millions to update their existing operations rather than look elsewhere, it gives the green light for others to follow. The ABC's infrastructural development also adds to a growing regional mobility that has dovetailed with the government's push to open up the 'economy of the interior'. The revamping of regional airports and emphasis on a better-trained workforce is broadening and strengthening Sao Paulo's economic base, and that of the country as a whole.

**"The goal is to produce a regional strategy, not several city strategies."**

Luiz Marinho  
Mayor of Sao Bernardo de Campo



Luiz Marinho  
Mayor of Sao Bernardo de Campo

"The message to the ministry of development is that we don't want to have to go into fiscal battles to attract investors. We'd rather take good care of our current industrial facilities. If they are satisfied with the region, they will naturally attract other companies and investors. We are, of course, also seeking new industrial sectors in the region, principally tech companies."

READ THE FULL Q&A  
the-report.net/brazil

**Present throughout Brazil**

Sesc and Senac provide quality education, healthcare, culture, leisure and vocational education and training, ensuring the social development of thousands of services and tourism trade sector workers.

**1.8 million students in 3,061 cities**

543 operative units

82 mobile classrooms

www.senac.br

**4.5 million people served in 2,200 cities**

509 operative units

136 mobile units

www.sesc.com.br

**The Great ABC Region.**  
A thriving Brazil starts here.

A world-class industrial park in the heart of Latin America with excellent infrastructure, energy capacity and consolidated logistics. A highly-developed region in a growing country, including environment protection areas and a vast water supply. Conveniently connected to the rest of Brazil and the world through links to Sao Paulo and the Port of Santos. Discover the cities of the Great ABC Region, an ideal location to invest and grow.

**Great deals are waiting for you.**

Comarcia Grande ABC  
www.abcabc.sp.gov.br



A classroom in Sao Paulo

# A new plan for education in Brazil

**NATIONAL EDUCATION PLAN** The National Education Plan set out clear targets for the country's teachers and methods, but effective implementation is needed on a state and municipal level for the changes to take root in Brazil

Every year, three million children enter the Brazilian education system, but only 500,000 of them will go on to leave high school with a sufficient level of Portuguese to enter the jobs market and only 137,000 with adequate maths. Add to these basic subjects the 21st century skills of critical thinking, teamwork, digital know-how and problem solving, and it is clear that the government urgently needs to address its public education shortcomings if Brazil

is to develop. Education for all is a noble cause, but it remains hollow rhetoric if these growing classrooms are not empowering their occupants with knowledge.

In 2011, Sao Paulo's Governor Alckmin set two long-term goals: to put the state on the path towards having one of the 25 most-advanced education systems in the world by 2030; and to fundamentally change the way teachers and their profession are regarded. Much-needed investment followed basic and merit-based wage increases and training, but this has tailed off since 2013. In 2014, state funding was slashed by R\$275 million, calling for extensive cost-cutting in a sector not renowned for its efficiency.

Sao Paulo's state education secretary, Herman Voorwald, understands the crucial role of the teacher in inciting change. "The goal was giving every child the right to be in school", he says. "Originally it was inclusion with quality, but teacher training hasn't kept pace with the youth of today who are now better informed and more critical, and demand a different relationship with their schools."

While the concept of education has changed within Brazilian culture, the next stage is for the concept of teaching to change and modernise. The National Education Plan established clear goals for the system's development, engagement of the community and the idea of full-time education. "If everything that was put forward is realised, there will be a significant improvement in education in ten years", says Sao Paulo's city education secretary Gabriel Chalita. "It makes no sense for kids to go to school, finish a full cycle and come out the other end still not able to read or write."

## PERSPECTIVES ON NATIONAL EDUCATION

Central to the success of the National Education Plan is getting all levels of the country's administration, from federal to regional, on board. In Sao Paulo, the plan's goals are clearly understood, but with increasingly limited resources, the methods for igniting sweeping reforms will demand even greater efficiency from the state and city governments.



**"Universities haven't been able to train teachers for the new reality of basic education"**

**Herman Voorwald**  
Secretary of Education for Sao Paulo state

As a former rector at UNESP University, Herman Voorwald understands the challenges facing the education system better than most. His appointment as state education secretary in 2011 marked an important shift in the Alckmin administration's thinking towards the greater valuing of teachers to engender change.



**"Our biggest priority is not leaving kids behind"**

**Gabriel Chalita**  
Secretary of Education for the city of Sao Paulo

Born and raised in Sao Paulo state, Gabriel Chalita was made city education secretary in 2015. A prolific writer and professor, he recognises that an end-to-end strengthening of the knowledge chain, from preschool through to university, is crucial to improving the education system's final output, its graduates.



## Teaching the teachers

The Paulo Renato Costa School for the Training and Improvement of Teachers was founded in 2009 to provide ongoing training for the 270,000 education workers in the state of Sao Paulo. The first school of

its kind in Brazil, it offers distance and on-site learning, virtual classrooms and videoconferencing to help fulfil the government's goal for the continued assessment and evolution of its education sector workforce.

# Re-evaluating the role of the teacher

**TEACHING** Underpaid and undervalued, the teaching profession has finally been recognised as a route into the sector's improvement all the way through the education cycle

As the Brazilian classroom has become more dynamic, the role of the teacher has changed, but for the most part their training has yet to catch up. With answers and opinions on every subject now just a mouse-click away for students, keeping the classroom relevant to their pupils is a growing concern of the teaching profession.

The term 'knowledge managers' is increasingly common to describe the way teachers must now administer resources, making it even harder to change a culture of Brazilian society undervaluing their role. The cumulative effect of that perspective has been a dangerous demotivation of education workers that is only now being addressed. "Teachers need to be valued in their hearts, minds and wallets", says Gabriel Chalita, Sao

Paulo city education secretary. "That means improved, continuous training, helping them to give better classes, listening to teachers, telling them how important the teaching profession is and a salary policy that communicates to young people that a teaching career is financially attractive."

A key aspect of that training, through centres such as Sao Paulo's EFAP, is the concept of teaching consultancy, the idea that a teacher's practical experience should be directly shared with others. The demands of the new policy of inclusion and an increase in special needs students is just one critical area that few teachers are adequately trained in, and directly shared experience proves vastly more useful than theory.

Along with improved wages to make the pro-

fession at large more attractive, the government's education plan is shaping a more reassuring future for teachers, but the obstacle of an ingrained notion of the role of the teacher remains. A key focus for Sao Paulo is blurring the boundary of school and home to engage society more with who looks after its children on the other side of the school gates.

**The government's policies are shaping a more reassuring future for teachers**

## INTERVIEW

**Ana Maria Diniz**  
Director of Instituto Peninsula



quality of education.

**What is the best way to motivate the country's teachers?**

The role of teachers has changed. Today they should be more like mediators of content, facilitators, motivators. Teachers should also stimulate students to get into contact with relevant content outside school and then come to the classroom to discuss them. My mission is to make the teaching career one of the most admired in the country.

**What makes you optimistic?**

There are two factors. Firstly, there is a change in generations. Parents of children going into basic education today have already studied and are predisposed to demanding better quality, because they have a reference point. In the next ten years, I believe this situation will have been completely turned around. Second is the use of technology in the classroom. Technology has no arms and legs and it means nothing by itself, but it can maximise learning if it is used well.

**The Peninsula Institute was created by the Diniz family in 2010 to promote the twin pillars of education and sport for young people in Sao Paulo, creating a more engaging and inspiring environment for students and teachers**

**Does Brazil face ingrained cultural challenges in its education reform?**

I don't believe in the theory of educating parents first and only then educating children. The issue is complex and needs addressing from different angles simultaneously. Until 20 years ago, simply having children in school was enough; people didn't think they could demand a better

**"My mission is to make the teaching career one of the most admired in the country"**

**THE PROFESSIONAL DEVELOPMENT OF 7 THOUSAND PUBLIC SECTOR TEACHERS BENEFITS OVER 3 MILLION STUDENTS.**

Cultura Inglesa believes the teacher plays a major role in the process of change in education. This is why Cultura Inglesa São Paulo offers a free programme of continuous development for English teachers working at public sector schools in the state of São Paulo.

In this programme, teachers have English lessons to deepen their knowledge about the language, and courses in which they are encouraged to reflect upon their teaching practice.

In almost 20 years of existence, the programme has directly contributed to the professional development of over 7,000 teachers and indirectly reached around 3 million students, preparing them to make a difference when they enter the job market with a better level of English.

**CULTURAINGLESASP.COM.BR**



Photo: Gastao Guedes

### Sport as an educational tool

The idea of using sport as a tool for education is nothing new, but its potential as a social glue has brought it greater prominence in overcoming the challenging inequality of Brazilian society. The government's process of social inclusion has demanded greater collaboration among students but also inspired competition, and the parallels between the classroom and sports field are plentiful. The rise in prominence of soft skills for young people such as teamwork, determination to succeed and creative thinking and the hope to produce more well-rounded citizens have made its values, so close to those needed to succeed in life, more relevant than ever.



### PERSPECTIVE

**Jose Maria Marin**  
Ex-president of the Brazilian Football Confederation (CBF)

**Jose Maria Marin, who stepped down as president of the Brazilian Football Confederation in April, is confident in the positive impact the World Cup had on the country - despite the final result not being what Brazil wanted.**

Our culture is unique, and the country has been developing in all the areas that a nation should: industry, entrepreneurship, culture and regarding its most important traditions. Foreign tourists were able to see that the potential of the country isn't entirely devoted to football and carnival and Brazil goes far beyond that stereotype.

We left a great legacy for children and young people with the way that we sang our national anthem. I was very moved when a couple of private school owners told me that their children asked them to sing the national anthem in class on more than one occasion. We may have slipped up on the pitch, but we now have our civic spirit back, I have no doubt about that.

# Towards a new model for the future

**FUTURE OUTLOOK** Brazil has been presented with an opportunity to gain ground on its neighbours and make up for the lost decades of mass educational mediocrity, but seizing it will take a nationwide revolution in thinking

Almost the world over, the essence of the classroom has changed little in over a century in spite of enormous technological advances. Now, though, there is the genuine sense that the next decade is likely to see sweeping changes. Brazil has the opportunity to regain its rightful place in the global education rankings. Learning in the 21st century is more than arithmetic and spelling and so, despite having fallen perilously behind its peers, Brazil still finds itself in a position to catch up the lost ground.

What is required, however, is speed, and the efficient alignment of three levels of government, the agility and ambition of the private sector, the investment of the productive sector and the adoption of a shift in thinking by society as a whole. It isn't enough to simply embrace new technology and a new ideology. Brazil has to become a pioneer. The government has already begun to rethink the role its teachers play and how they are viewed. A shift towards leading students on their own learn-



Students at a school that collaborates with the Ayrton Senna Institute

### FOCUS ON



Young learners at the Lemann Foundation

### Learning maths with the Khan Academy programme

The rise of the Khan Academy from a family YouTube video to a

global partnership with Brazil's Lemann Foundation shows just how difficult it can be to predict the future of global education trends. What began as a maths class given by the then-hedge fund analyst Salman Khan for his

young cousins, quickly became a Bill Gates-approved global education platform with 10 million unique users every month. Its popularity led to an invitation from President Dilma Rousseff to create content for a national literacy scheme across Brazil. A deal was eventually struck to devise software to be loaded on to 600,000 tablets and distributed among middle school teachers, showing Khan's video classes and translated into Portuguese. The former banker has also partnered with Xbox entertainment systems, showing just how far a small idea can reach. As Bill Gates said after Khan's TED Talk, "You have just seen the future of education."

ing path means that their training is more crucial than ever. Done right, it will mean that students can be given more autonomy to use the resources at their fingertips.

What were once straightforward problems now have new angles, approaches and arguments, and questioning perceived notions is more relevant than ever. That new teacher-student dynamic gives a country like Brazil that is searching for new strategies a perfect opportunity to innovate.

The investment and the will now exists. The National Education Plan has led the way and state and municipal authorities have greater confidence to experiment and develop their own projects. Philanthropic private entities like the Peninsula and Natura Institutes or the Bradesco Foundation, who will pump R\$220 million into the modernisation and expansion of their schools this year alone, now see the importance of their role more clearly.

According to Pedro Villares, CEO of Instituto

Natura, private entities like his will be vital in the shaping of the future system. "The private sector has the role of promoting agility but is also good at bringing together different actors. We play that role really well to bring together

### "We have a wholesale problem and are using retail strategies"

**Viviane Senna**  
President of the Ayrton Senna Institute

secretariats of education, software companies, education institutes and so on." For the private sector, the focus isn't about getting a logo on a school bag, it is about strategic investment in the future of the country, its economy and its ability to compete in the world market.



Children at an Itau Foundation programme | Photo: Bruno Polengo

### A different approach

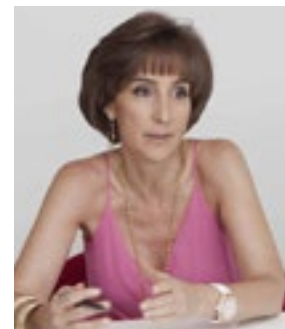


Photo: Adriana Moura

**Vivian Senna**  
President of the Ayrton Senna Institute

The Ayrton Senna Institute (IAS) has been working with young Brazilians since 1994. Presided over by Viviane Senna, the sister of one of Brazil's greatest sport-

ing idols of all time, the institute undertakes vital research and investments in the realm of education in the country, and is now looking increasingly towards bringing science to the art of teaching.

This year alone, the institute's programmes and solutions will directly benefit more than 1.8 million young people in over 700 municipalities and across 5 regions of Brazil, through the training of 65,000 education professionals. Thanks to its indexes for targets and evaluations, taboo for decades in the sector, it has helped force the culture of educating into its own self-assessment and asked how it has been allowed to fail such a large proportion of society for so long.

Two decades of research has made more explicit than ever the link between education and wage inequality in two-thirds of cases, and shown that the classroom needs to be made more relevant and attractive than ever before. With general agreement that scale and quality are the key facets that the government has struggled to come to terms with, Senna believes the next step is looking at exactly how children learn. "We have a wholesale problem and are using retail strategies," she argues. "Our focus now is on bringing science into schooling, to study the ways in which children learn. This information can help schools do what they are meant to be doing, but they pretend it doesn't exist."



### Q&A

**Maron Emile Abi-Abib**  
National director of SESC

**Operating as arts funder, health provider and educator, SESC was created by and for the service industry in the 1940s. Maron Emile Abi-Abib has turned his focus on the organisation's capacity to act as a social glue and shaper of citizens, and in 2008 he opened its first free residential high school in Rio de Janeiro.**

### How has SESC helped the process of social inclusion in education?

The SESC High School was created after a diagnosis of what was wrong with education in the country, so as never to repeat it. We created it with the expressed goal of shaping young people from all over Brazil not just academically, but also for the reality of life, and to participate in the development of the country.

### What does the residential school model have to offer students?

This is not a model that could be used in full to solve Brazil's educational issues, but it is a model that entails and bestows a lot of responsibility, in which students are fundamental co-drivers and consequently protagonists contributing valuable lessons for education in the country.

## BRASAS DNA

PRACTICE | AGILITY | RESULTS

- **BRASAS REGULAR**  
Course with 2-3 lessons per week.
- **BRASAS SPRINT**  
Superintensive course with 4-5 lessons per week.
- **IMMERSION** | 1 module in 15 days.
- **BRASAS ON DEMAND**  
Online English – learn your own way, in your own time.
- **CORPORATE SOLUTIONS**  
Unique solutions tailored to your business.
- **BRASAS EXAM PREPARATION**  
Preparation for TOEIC®, TOEFL® ITP and TOEFL® JR.
- **PORTUGUESE FOR FOREIGNERS**  
2 hour lessons | Twice a week.

We also offer language courses for children from age 6. Find out more at [BRASAS.COM](http://BRASAS.COM)



# How they see it

**VIEWPOINTS** The philanthropic arms of some of Brazil's largest corporations are increasingly concerned with the education of the nation as the most responsible and effective means of securing a sustainable future for the country

READ THE FULL Q&AS  
the-report.net/brazil



## Success through training

Pedro Villares  
CEO of Instituto Natura

**“Training needs to focus more on the practical aspects and hard work, and good performance needs to be better rewarded”**

Instituto Natura is the charitable foundation of the Brazilian cosmetics giant. Providing essential support to the country's public education programmes, it is currently testing the means by which innovation can be most effectively harnessed by the sector.

**Why did the Natura Institute choose to work with education, rather than sustainability?** Every time we think of sustainability, we think of the environment, but it is much more than that. There is a whole social aspect to it. Our take on sustainability now encompasses more than just the environment, and with that expanded vision in mind we could not think of anything that has a greater impact than education. Without addressing education, nothing is addressable. It is step number one.

**How can Brazil best tackle the issue of teacher training?** Teachers need some autonomy, but a balance is required. Only then can adequate evaluations be made. This is all part of the PDCA cycle: 'Plan' content for classes, 'Do' more structured classes, 'Check' and evaluate regularly and 'Act' accordingly. To do this we also need well-trained and motivated teachers, and at the moment we have neither. Train-

ing needs to focus more on the practical aspects and hard work, and good performance needs to be better rewarded.

**How can such changes be implemented in practice?** Innovation is all around us. Children learn via YouTube now, and schools have to adapt. We believe that schools can change societies, especially in poor, fragile social settings where bringing parents and the community into the school makes a lot of difference. We talk a lot about educational systems and meritocracy, but there is low-hanging fruit there that requires no investment, just a change in mindset.

**How important is the early adoption of new technology?** Colegio Fontan, which is now partnered with the Gates Foundation and Microsoft, has a learning management system in which students learn outside of classes. It is unbelievable. We are doing a similar project in Rio. GENTE (Experimental School of New Educational Technologies) uses a structured curriculum that students work through on their own. The government has to be cost-efficient and invite bids from various companies, but with innovation you cannot always do that.



## Expanding access

Marianna Luz  
Director of the Instituto Embraer

One of the most highly-regarded and competitive engineering higher education courses and research centres in Brazil, the Instituto Tecnológico de Aeronautica inadvertently gave rise to the country's aeronautic industry when its alumni created Embraer. Now the world's third largest commercial jet manufacturer, its philanthropic offshoot, Instituto Embraer, was founded in 2001 and dedicated to education as the foundation for society's development. Four years later, in 2005, the institute began a scholarship scheme to provide funding for students from the Embraer College in Sao Jose do Campos to help them attend the best universities in Brazil. The funding represents a direct and sustainable investment back into Brazilian society and expertise via the award of repayable bursaries. Once graduated, the students are then obliged to pay back into the system for the benefit of others to then follow suit, sustaining opportunities for the brightest young minds from the region to attend Brazil's most prestigious universities, from USP to PUC-Rio. In its first ten years in operation, the scheme has helped 729 students attend universities previously considered beyond their horizons, pointing the way for sustainable investment in higher education and by extension the Brazilian economy as a whole.

## Turning ideas into reality

Denis Mizne  
CEO of Lemann Foundation

Created in 2002 by Brazil's wealthiest entrepreneur Jorge Paulo Lemann, the Lemann Foundation began with small goals in the realm of education and teacher training, and has since expanded its vision, pursuing the adoption of new technology to revolutionise education.

**How important is it that Brazil acts quickly to make changes to the education sector?** When I started working in education, what most scared me was that the children cannot wait. Change is urgent. We treat the education problem as something to be addressed in twenty years, but errors accumulate and it gets increasingly difficult to teach things to children at the wrong age.

**Are teachers the key to turning around the situation?** We need a unified curriculum so that students, teachers and

parents know what is expected of them each year. In Brazil, we provide teachers with four years of training which is very long, vastly theoretical and includes no practice. We haven't yet taught our teachers to teach, and we need to help them.

**How can the productive sector help?** I think our role is to help Brazil transition from the old to a more modern system of education, which we cannot achieve merely with incremental improvements. We have to change the paradigm. Everyone is improving and we need to make a leap. The private sector, and specifically its technology, can provide the ideas to make that happen. By the end of 2015 we expect 10 million Brazilians to be using high-quality technology in their day-to-day education. We are looking at ideas that have worked elsewhere, such as the Khan Academy platform for maths.



**“By the end of 2015 we expect 10 million Brazilians to be using high-quality technology in their day-to-day education”**



Become a partner of the Methodist Education Programme in Brazil

Learn more:  
[metodista.br/partnership](http://metodista.br/partnership)



**IF FOOTBALL IS LIKE A RELIGION, YOU MUST MEET ITS TEMPLE**

**CBF Experience Museum**  
100 years of the Brazilian National Team. Interactivity, technology and unrivalled emotion. You must experience the history of the most captivating team in the world in the most wonderful city on the planet. Come to Brazil and enjoy this unforgettable experience.



Rio de Janeiro • Brazil • [museucbfexperience.com.br](http://museucbfexperience.com.br)



## Addressing challenges

Antonio Jacinto Matias  
Vice-president of Fundacao Itau Social

**How big is Brazil's education crisis?** Education is the biggest bottleneck stopping sustainable growth in Brazil. If we look at it historically, it has shown mild improvements. In the last few decades as we reached universalisation, started an evaluation process and now have better financing schemes which have improved the structure of education. However, at no point in history was education truly a priority for the country.

**How has that been allowed to happen?** The Brazilian model of education management just does not work. Plans rarely last longer than one administration and, when they are implemented, they rarely reach the

classroom. Therefore, there are problems at every level. There are challenges in key areas such as curriculum, teacher training, school leadership, evaluation and, especially, the structuring of a teaching career that attracts young people to teaching. Brazilian teachers get around 10 percent of the salary of a Swiss teacher.

**What needs to be done?** There is a need to expand the school day because Brazilian students spend only four or five hours per day in school, but there is also the need to diversify the curriculum and strengthen the work of NGOs and after-school programmes. Families need to be part of this debate.

**“At no point in history was education truly a priority for the country”**

## Education for all

José Augusto da Gama Figueira  
President of Oi Futuro

Oi Futuro is the social responsibility institute of the Brazilian telecoms company Oi, acting in the realms of culture, education and sustainability. Among its goals is the freeing up of access to technology and, by extension, the universalisation of knowledge, to encourage social transformation through its advanced educational centres (NAVE). Developed in conjunction with the Rio de Janeiro and Pernambuco state education departments, in 2009 the NAVE was recognised by Microsoft as one of the thirty most innovative schools worldwide. It currently offers vocational technology training to 960

students and 100 educators. In 2010 NAVE was chosen to become a mentoring school within Microsoft's Innovative Schools Program, and two years later was included as part of the World Tour School alongside the likes of the UK's Cornwallis Academy, and remains the only Brazilian school to take part. Oi has since developed the award-winning Oi Kabum! schools, providing courses in graphic design, photography and web design to underprivileged youths and graduates from the public education network in four schools in Belo Horizonte, Recife, Rio de Janeiro and Salvador.



Photo: Ana Colla



## Laudable goals with promising solutions

**A thorough plan for Brazilian education reform has finally been set in motion but with so much at stake, are its goals realistic? With a hitherto unimaginable alignment of policy, investment and the will of society, Brazil is turning promising legislation into reality**

Brazil appears to be united behind a cause for the first time since the touchpaper of protest was lit at the outset of 2013. President Rousseff's response – to dig deeper into federal pockets than ever before and initiate an about-face in the ailing education sector – has brought some much-needed focus to the root cause of the country's faltering economy and social disquiet. It is, however, merely the beginning of a long road to recovery, the real impact of which may still only be felt in decades to come. The scale of the recovery required has backed the government into a corner from which politicians and educators alike agree the only

positive route out is a top-down educational overhaul. That type of proactive planning is not something often associated with a country more used to reacting to and bandaging over, rather than preventing crises, but universalisation has been a crucial first step to fight inequality. With productivity in decline and functional illiteracy refusing to follow suit, the next step is improving quality to overcome the present situation, which Viviane Senna, president of the Ayrton Senna Institute, describes as "first-world access rates with third-world success rates." For an outdated system, the timing ought to be perfect. The



increasing number of young people entering the classroom means that new methods can be adopted quickly and old structures abandoned more easily. The impact of introducing full-time schooling, with full-time, highly-trained teachers that are better prepared to offer classes that inspire students rather than turn them off, would change the paradigm nationally in the way the opening of the UFABC university did for that region. If it is to succeed, Gabriel Rodrigues, president of the Brazilian

Association of Higher Education Supporters (ABMES), is in no doubt that the public system has to learn from the private and act quickly to be in sync with, and pioneering in, today's global innovation trends in education. How best to harness new technology is the crucial question, and Brazil has to find the right one to suit its model. "If the private sector does not join forces with the government to take care of basic education", says Rodrigues, "Brazil will lose its momentum."

**"If the private sector does not join forces with the government to take care of basic education, Brazil will lose its momentum."**

**Gabriel Rodrigues**  
*President of the Brazilian Association of Higher Education Supporters (ABMES)*



*"...teaching teachers means having an impact bigger than I could have imagined"*

"My mother was a teacher her whole life, and I grew up dreaming of becoming one myself!

I was lucky enough to attend Singularidades, a pedagogy college run by the Peninsula Institute which focuses on classroom practices.

The experience of attending this school opening up a whole new world to me.

I managed to open my own school. Now, as well as managing this school, I am also proud to be one of the pedagogy coordinators at the college I graduated from.

To me, teaching teachers means having an impact bigger than I could have imagined. I am sure that these teachers and I will transform the reality of education for any class we might teach, in both public and private schools.

It is a privilege to have attended Singularidades, a college that is truly committed to the learning process."

Marcelo Cunha Bueno, educator



[www.institutopeninsula.org.br](http://www.institutopeninsula.org.br)