

The education system and support technology in Mexico and the BRIC

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An analysis of the educational model of each of the countries forming the BRIC as well as major technological tools used in this area versus Mexico's educational model can help to better understand where we are positioned, what we need and what mistakes we are making. The estimate is that the BRIC countries are world leaders in 2050 with 44% of GDP.

BRIC, Education, Educational Model, Technology and Education.

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Introduction

The countries of the BRIC, now BRICS with the inclusion of South Africa, not only are countries that collect similar characteristics in a large population, vast territory and important natural resources, they also have the fortune to share an enviable stability in macroeconomic variables and especially in regard to investment opportunities and growth prospects in the coming years. The clearest examples are China and India with an average annualized growth rate of 9% and 8% in the last decade. Brazil and Russia with moderate rates but with similar growth prospects for the coming years and decades.

The interesting thing about the countries of the BRICS is to analyze the impact it has had on the population such as poverty reduction, health, housing etc., However, we believe that even more important is to determine the source or motor trigger that made these so attractive countries for investment, we must not forget that a few decades China, for example, was a closed country to economic and cultural world and India was mired in extreme poverty or coming from a Russia economic disaster following the fall of the socialist regime, nations are now estimated to be the dominant countries for the year 2050, generating 44% of the World GDP. Although Mexico shares many of the characteristics that have the BRIC countries, the issue is why Mexico is not considered within the same block? Regardless of whether it belongs or not because the OECD or a simple acronym theme's background is that due to poor growth in recent years, but is stable enough to compare it with the dynamism of the BRIC countries. Then the question is what these countries have to make that machinery work?

Regardless of the multiple responses that can be obtained is a common factor theme of Education and Technology.

Could not understand the progress of a country without the support of its people and technological tools. We know that education is very important, its level and quality often depends on the future of any country, then it is interesting to analyze the educational model of each of the countries in the BRIC versus of Mexico and know where we are unemployed, BRIC countries are doing and what technological tools have been used to strengthen their educational level. The following sections discuss each of them.

Structure of the education system

With regard to the educational structure in Mexico is not much difference with the countries of the BRIC, which covers basic and higher grades of education, however we found a difference in higher education in regard to Russia and Brazil, as these countries offer associate degrees or between secondary and college preparatory education, which are prepared workers of different professions, in the case of Russia is called Professional Education and in the case of Brazil Sequential Courses and is aimed at those who did not have access or opportunity to enter universities.

The government gives them this option, in the case of Russia has a duration of 3 years and in the case of Brazil is 2 years. The Brazilian government says the professionals who are already in the labor market and need a higher level diploma are most benefited by this type of training. The following tables show the structure of the educational system of each of the countries of the BRIC and Mexico shows.

Structure of the Education System of Mexico

Mexico				
General Program	Specific Program	Grades/years	theoretical age	Comments
Basic Education	preschool	3		No mandatory. It serves children ages 4 and 5 years old
	Primary	6	6-11	Compulsory Education
	Secondary	3	12-14	
Higher education	preparatory	3	15-17	
	University	4	Older than 18 years	
	Especialization	1		
	Mastery	2		
	Doctorate	1		

Table 1

Structure of the education system in Russia

University education in Russia is the cheapest worldwide.

The vast majority of Russian citizens can enter free, but if you do not have that facility at hand, the price of a semester costs between 300 and 1000 dollars (depending on the university and the faculty)

Food, urban transportation and personal expenses (laundry, cleaning supplies, notebooks, etc..) Comprise an average budget of \$ 150 a month, it may vary according to the habits, customs, and tastes of the student organization.

Lives in university hostels located, mostly, on the same campus. There, consisting of cooking, reading, sports rooms, gas, cold and hot water all year round, heating, electricity, bedroom furniture and bedding. Live with Russian and foreign students more than 100 countries. (Ministry of Education and Science of the Russian Federation, 2011)

Table 2

Structure of the Education System of Russia

Russia				
General Program	Specific Program	Grades/years	theoretical age	Comments
	Casa Cuna		18 m – 3	
Basic Education	preschool	3-7	3-6	No mandatory
	Primary	3 or 4	7-10	Compulsory education. required to pass professional education
	Basic Secondary Education	5	10-15	
	Higher Secondary	2	16-17	to go to college or University
Higher Education	Professional Education	3	18-20	Prepare to workers of different professions.
	School	2	Older than 18 years	Prepare technical specialists, to finish you can enter university in the same specialty.
	University	2		Higher professional incomplete (diploma is granted)
		4		Professional higher
	6	Higher Vocational Instructor (master's degree)		

Structure of the Russian Education System (SEP).
(Ministry of Education)

EDUCACIÓN SUPERIOR				
6		Enseñanza Universitaria		
5				
4				
3				
2				Pos secundarios (Educación No Universitaria) Técnica
1				
EDUCACIÓN SECUNDARIA II				
3		Escuelas de Carácter General Liceo		Educación vocacional
2				
1		Escuela Preparatoria		
EDUCACIÓN SECUNDARIA I				
5	8	Educación Obligatoria		
4	7			
3	6			
2	5			
1	4			
3 ó 4	3			
EDUCACIÓN PRIMARIA				
2	2			
1	1			

Table 3

Correspondence Chart Russia - Mexico. (Ministry of
Education)

MÉXICO	RUSIA	
	EDUCACIÓN PRIMARIA	EDUCACIÓN BÁSICA
1	1	1
2	2	2
3	3 ó 4	3
4		4
	EDUCACIÓN SECUNDARIA BÁSICA	
5	1	5
6	2	6
SECUNDARIA		
1	3	7
2	4	8
3	5	9
BACHILLERATO		
	EDUCACIÓN SECUNDARIA SUPERIOR	
1	1	1
2	2 ó 3	
3	3	2

Table 4

Structure of the education system in China

China currently has more than 200 million primary school students, along with preschoolers added a population equivalent to sixth of the national total.

Therefore, the Central Government has placed basic education in a position of priority development, taking it as an important area in terms of infrastructure development and education. (Embassy of the PRC in Venezuela).

Structure of the Educational System of China

China				
General Program	Specific Program	Grades/years	Theoretical age	Comments
Basic Education	Primary	6	6-11	Compulsory Education. It can be done in 3 ways (6 + 3, 5 + 4, or nine in nine degrees)
	Elemental Secondary Education	3	12-14	
	Middle School	3	15-17	
Educación Superior	Higher Education	4 to 6	18-21	bachelor's degree
	Mastery	2 o 3	Older than 21	
	Doctorate	1		

Table 5

Structure of the Education System in China (SEP).
(Ministry of Education)

EDUCACIÓN SUPERIOR (SE OTORGA TÍTULO DE BACHILLER)	
6	Colegios y Universidades
5	
4	
3	
2	
1	
ESCUELA MEDIA SUPERIOR	
3	
2	
1	

Table 6

Tabla de Correspondencia (SEP)

MÉXICO PRIMARIA	CHINA ENSEÑANZA PRIMARIA		
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	ESC. MEDIA SEC.
SECUNDARIA		ESC. MEDIA SEC.	
1	7	1	1
2	8	2	2
3	9	3	3
BACHILLERATO (NIVEL MEDIO SUPERIOR)		ESCUELA MEDIA SUPERIOR	
1		1	
2		2	
3		3	

Table 7

Education in China has a high level of demand. Education provides the usual school hours plus additional hours of extracurricular classes such as English, math, etc.. The opportunities to enter universities are only for the best students in addition to the companies highly value educational titles.

Structure of the education system in India

As a result of efforts in literacy campaigns, the literacy rate in the country has increased from 18.33 percent in 1951 to 65.38 percent in 2001. Thus in five decades, the literacy rate has increased a 47.05 percent, or an average of 9.41 percent per decade.

According to the 2001 census the male literacy was 75.85 per cent and female literacy 54.16 percent. (India.gov.in). More emphasis on science and mathematics, it raises a very good basis for the development of technical skills in the field of engineering such as programming and information processing. The second reason is the dominance of the English language, both spoken and written, and emerging technical professionals with a competitive edge.

Structure of the Educational System of India. (Ministry of Education)

India				
General Program	Specific Program	Grades /years	Theoretical age	Comments
Basic Education	Daycare	4	0-6	No mandatory. Most are private schools.
		2		
	Primary	5	6-11	Mandatory Education
		4		
	Secondary	3	11-15	
Preparatory	3	16-17		

Higher Education	University first grade	3-5	17-20	
	University second grade	1-3	21-24	Master degree
	Doctorate	More than 2 years		

Table 8

Structure of the Education System in Brazil

Higher education in Brazil is offered by universities, colleges, faculties, institutes and centers for technology education.

Citizens can choose three types of graduation: bachelor, bachelor and technological training. Post graduation courses are divided into *sensu lato* (majors and MBAs) and *strictu sensu* (master's and doctoral). In addition to the face shape, in which the student must have frequency at least 75% of the cases and assessments, is still possible to form for distance learning (ODL). In this mode, the student receives books etc., and with the help of Internet. The student's presence is not required in the classroom. There are also mixed courses, classroom lectures and distance. (brasil.gov.br)

Structure of the Education System in Brazil

Brazil				
General Program	Specific Program	Grades/years	Theoretical Age	Comments
Higher Education	Sequential courses (specific training, Complementation studies)	1600 hours	Older than 18	Do not have access to postgraduate (Masters and PhD)
		2400 hours		
	Graduation (Bachelor)			
	Graduation (BA)	2800 hours		

Graduation (Technology Training)	1600 hours		
Maestry	2		
PhD	2		
Professional Grade	3		
Specialization courses	360 hours		

Technology in Education

These countries supplement their education with information technology, then we state some programs that are implemented.

Brazil

Regarding technology Brazil has within its educational system

- Telecentres

Are Community spaces in which citizens have free access to computers connected to broadband Internet. These facilities are essential in needy regions, in which the individual does not have access to the virtual world differently. In these spaces people can do basic computer courses and special workshops. There are over 5400 community telecentres spread around Brazil.

- Each unit has 11 computers, a printer, multimedia projector, a camera for online safety monitoring and furniture required for operation. They are managed by community members.

- Digital inclusion programs

These are actions that help to democratize access to new technologies, bringing computers, Internet connection and training to needy populations. For example, there is the Computer for all program offers machines with a given configuration by the government at discounted prices, as have tax incentive. It is also possible to use special lines of credit to purchase another of these programs are called telecenters. Another program called Broadband in schools, with the help of telephony operators; Internet carries with fast connections to Primary students in the public network. The program is scheduled to run until 2025.

- Public Domain

The Public Domain Portal was launched in November 2004 and made available to users a virtual library, where you can consult literary, artistic and scientific works in various formats (text, sound, image and video) and public domain or have been duly authorized disclosure.

- Mercosur Education

Aims to disseminate knowledge and integrate the work within the block. A service offering is bank practices and public policies in the member countries of the group. Therefore the solutions found in one country can be taken by others. The tools that teachers and students encounter is the terminology database of Education.

Russia

- Students Forum All Russia

A forum held in Russia every 3 years with the main objectives: Select basic tools and mechanisms for the participation of students and student government in the process of modernization and development vocational training, develop strategies for student government in Russia, development of an organizational model for the interaction of state bodies, local authorities, entrepreneurs, heads of educational institutions and other institutions of research and education community with the community student, identifying the areas and forms of interaction, improve the legal framework of the activity of the student government.

- Define the role of the student community to improve the quality of education, scientific development, innovation and modern technologies in education, attract government attention and knowledge of students. From October 31 to November 3 will be held in the Student Forum Barnaul, Russia.

The October 1, 2011, the Russian Ministry of Education announces a public competition to support the strategic development of programs of public educational institutions of higher education. The selection of programs for the strategic development of the universities is based on the evaluation of educational, scientific and innovative capacity and financial stability, strategic development and evaluation of the projects proposed by the concession.

India

- Text Books online

Online This service provides easy access to textbooks, the service covers textbooks of all subjects taught by the NCERT for classes from I to XII, in English or Urdu.

- Red Results

The results of various academic and entrance exams for selection in the hands of various Boards, Commissions and Institutions are being published online by the National Informatics Centre (NIC) since 1997, IAS is a repository of ICT Organisation of the Government of India operates depending on the IT Department, Ministry of Communications and IT.

- It is a specialized portal www.results.gov.in developed for this purpose and has been very popular among students and parents who can review your test results in the comfort of your home. Important announcements for students are posted on the web portal.

- Touch Screen Tablet for Students

Touch tablet at a subsidized \$ 35 called "Aakash" (sky) for display, aims to students, the government distributed about 10 million in the coming years, was launched in poorest and most remote regions. The tablet features web browser, works for video calls, the battery lasts about 4 hours and has 2 USB ports.

China

- Teaching via the Internet

The emergence of some large investors has made this modality a new hot spot in the field of education. The main beneficiaries are the students in remote areas, border and less developed in the educational aspect. Those who have failed to pass the entrance examination to college, and employed persons also have the opportunity to study (ongoing study) and get a specific training in higher educational establishments across the network.

- The Ministry of Education has recognized 68 institutions of higher education and the University of Central Radio and Television as experimental centers for modern distance education.

In late 2003, these centers were established throughout the country 2,027 delegates-school study centers, in which 140 specialties covering 10 major departments, with 1,373,000 students's enrolled work.

The gradual dissemination of broadband technology has driven the development of online education.

The Network for Scientific Studies of Education of China (CERNET) whose construction began in 1994, has a network of high-speed transmission 20,000 miles, with 28 information channels international and regional covering major cities across the country, what makes it the second Chinese Internet.

This network uses high speed with the China Education Network Satellite Broadcasting Broadband Multimedia (CEBSat), and constitutes a transmission platform for modern distance education, which "integrates into one heaven and earth "and provides the conditions for a more comprehensive support network.

Mexico

- Digital Skills for all

It is a strategy that promotes the development and use of information technology and communication (ICT) in primary schools to support student learning, expand their life skills and facilitate their integration into the knowledge society. This strategy aims to reduce the educational gap and the digital divide in which students and teachers are the people who have not had access to technologies. (Digital Skills for All, 2011)

- Telematics Classrooms

Model primary equipment. Computer equipment without connectivity and Internet access for every 30 students for 5th and 6th grade.

- Model Secondary equipment

Classrooms equipped with one server and 20 light laptops with internet connectivity and access to high school students.

- Enciclomedia

An educational strategy based on an articulator system resources, by digitizing textbooks, has been linked to their various lessons multimedia training materials aimed at promoting greater quality. Enciclomedia process consists of two main parts: the Student Site and the Site Master.

- Site Student

It has been called so as it integrates the Free Textbooks that each year students receive at the beginning of each school year, only in a digital and loaded onto the hard drive of the computer version. They are organized by grade level and subject, so that with one click, the teacher or student can easily select any of these books materials. The "enciclomediados" retain their original structure, but thanks to its digital edition has successfully linked by hypertext links and icons, lessons from books with thousands of multimedia educational resources such as images, maps, virtual tours, videos, movies, audio, interactive exercises, among many others.

- Enciclomedia

It is a database that organizes a body of information about Textbook, with the aim of providing a range of options for teachers and students to complement the topics covered in the curriculum from very different viewpoints.

- Site Master

In addition to Free Textbooks SEP digitally, Enciclomedia account with the Site Master, which was designed with major needs and tasks of teachers. In this space, teachers are familiar with various resources for this educational program and optimize their use in the classroom, as well as having other materials that support their daily work.

- Telesecundaria

Provide the most vulnerable groups in the country's secondary education with a solid foundation in each discipline with ethical principles and social solidarity, enabling them to develop their skills and abilities so that their graduates are able to perform successfully in secondary education and as responsibly leverage local resources to improve their quality of life through educational spaces, materials, computer equipment, use of new technologies of information and communication technologies (ICT), and according to their specific needs teaching methods. At the same time to provide training and resources to teachers to ensure optimum performance.

Statistics

Country	Literacy (%)	Unemployment (%)	PIB/Education (%)
Rusesia	99.4	7.6	4.3
Brazil	88.6	7	4.3
China	92.2	4.3	3.6
India	61	10.8	3.8
México	86.1	5.6	5.7

Conclusions

In general the educational models are similar, including Mexico, there are certain variations that have certainly made a differentiator over the years in each of the countries.

In Russia, the education of the cheapest in the world because the government guarantees that the basic level is free for all its citizens and even the upper level through competition or with very low fees should not approve it, it which makes a lot of sense to leave open education for every citizen. In Mexico it could be similar to the technology of each entity, UNAM and IPN shares about the problem are in the supply of higher education places.

Education in China is particularly competitive and demanding, perhaps because excess conditions the life of a person in adulthood, only if they have good grades is possible to reach the University, all courses have school hours; however, in our country the opposite happens at least primary education are studied only 4 hrs per day and is no longer possible to fail a student even if their ratings warrant.

In India they put much emphasis on mathematics, science and English students causing very competitive professional profiles. In our country English in higher education is not compulsory and the highest percentages of students are on financial administrative areas.

Similarly, in an effort to reduce the digital divide and increase the literacy rate is currently 60% are starting a project to provide low-cost tablets to students. The Brazilian model is similar, but has strengthened its system of distance education and is taken more seriously in education policies. In 2010 1.3% of GDP invested in research and development lie in Mexico was 0.4%.

It is vital to a society with more and better education if we want to be a more competitive country, although the educational model is obsolete in Mexico it is important to carry out reforms and specific measures to help improve the education, such as having more level hours in elementary (primary), strengthen scientific mathematical branches, be more demanding on the quality of students, open more schools of higher level or at least strengthen remote systems leveraging new technology tools.

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