Initial training of teachers: comparative study of Mexican and Chinese education systems

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Abstract

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This research investigates educational policies on initial training of teachers. The impact of teacher education on the quality of education causes the need to analyze and compare educational policies of the Mexican context against other educational contexts such as the Chinese as it leads economically and educationally among other developing countries. Mexico and China are positioned in the global economy as two countries with emerging trends. The analysis is framed in a comparative methodology that presents the general characteristics of the two countries and the description of their teacher education systems

Keywords: Comparative education, teacher training, educational contexts, Mexico, China.

Resumen

Formación inicial de docentes: estudio comparativo de los sistemas educativos de México y China

Esta investigación indaga en las políticas educativas sobre la formación docente. La incidencia de la formación del docente en la calidad de la educación genera la necesidad de analizar y comparar las políticas educativas del contexto nacional frente a otros contextos educativos de entre los países en vías de desarrollo líderes económicamente.

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México y China se posicionan en la economía global como dos países con tendencias emergentes. El análisis está enmarcado en una metodología comparada en el que se presentan las características generales de los dos países y la descripción de sus sistemas de formación docente.

Palabras clave: Educación comparada, Formación docente, Contextos educativos, México, China.

Introduction

The role of teachers it's one of the key elements for the functioning, developing and quality of the education systems. There are some references concerning this important role on education including data and indicators on teacher training. In Europe, *Supporting teacher competence development for better learning outcomes* (European Commission, 2013) or in Asia, *Teaching competency standards in Southeast Asian countries* (SEAMEO INNOTECH, 2010).

It is known that teacher career is on the eyes of the international and national politics and education reforms, therefore, the initial training of teacher becomes the support and platform for the design of the future professional development (Caggiano, Akanatzu, 2016). The importance of initial training of teachers is being researched by organizations promoting their ideas and guidelines on education of teachers as *Initial Teacher Education and Continuing Training Policies in a Comparative Perspective: Current Practices in OECD Countries and a Literature Review on Potential Effects*, published by OECD (Musset, 2010).

After 2012, at the laboratory of training and work of the University Roma Tre, a team of researchers are studying the self-evaluation of teachers of primary school and their professional qualities. Diverse studies

about the validation of proposed instruments of research have been published, the "Scale of evaluation of self-perceived competence of teachers of primary education[1] and other analysis of comparison from different European countries (Carbonero, Caggiano, 2015)..

As developing economies work on the improvement of their education systems for higher quality (Caggiano, 2016) and better outputs in order to accomplish higher standards of living and economic inclusion into the global markets, education reforms and the implementation of these policies should be analyzed under an international perspective of the two selected countries: Mexico and China. The choice of these two countries have been made due to their convergence on geography, demography and economic realities in the sense of process of development and a clear divergence on the academic results presented on this document.

1. *General information of the Countries*

Both nations are on the list of the most geographically sized countries, population and stable economic development and with good perspective towards the 2050 world economy expectations as China is expected to become the largest economy taking the place of the United States while Mexico will gain his place as a leading economy on the top ten lists. Mexico, located in North America, has a territorial size of 1, 964,

[1] J. A. Valdivieso, M. A. Carbonero, L. J. Martín-Antón, *La competencia docente autopercebida del profesorado de Educación Primaria: un nuevo cuestionario para su medida*, in «Revista de Psicodidáctica», n. 18, 2013.

380 km², number 13 in the world list, and a population of 127, 540, 423 habitants (World Bank, 2015) while China, located in Asia, has a population of 1, 374, 462, 000 habitants distributed on a territory of 9, 562, 911 km² making China the number 3 on the world list by size (National Bureau of Statistics of China, 2015).

As evidence of both countries economic strength, China is part of BRICS countries, an organization gathering the most advanced and developed countries among the emerging economies. According to data the BRICS accumulate the 43% of the world population and the 25% of the world wealth.

Meanwhile, Mexico is considered part of what will follow BRICS, MINT (Mexico, Indonesia, Nigeria and Turkey), emerging countries that are becoming the fastest growing and most advanced economies. In fact, while the United States plans to reduce the strength of the North American Free Trade Agreement, Mexico attended the 9th BRICS summit in China as one of the 5 special guests on September 2017 for being considered an emergent potential strategic economy. China is the second largest economy by nominal terms and Mexico is the fifteenth nonetheless is the number eleven measured by the purchasing power parity surpassing the Spanish and Italian economies while China already got to the first place (International Monetary Fund, 2016).

Another point among the convergences on the general overview is the interculturality and plurality that must cover the education policies of both countries. In China coexist 55 ethnics groups with different beliefs and religions. There is a national standard language set by the government, nonetheless there are other dialects used on the classrooms, especially on the obligatory education stage.

Similarly, the official language in Mexico is Span-

ish. Mexico is a laic State where different cultures and religions also coexist, there are officially 57 ethnic groups. Minorities represent around a 10% of the population according to data from the National Institute of Statistics of Mexico (UAM, 2006). As well as in China, other languages different from Spanish are used in classrooms on those geographic regions mostly composed by minorities.

Table 1 shows general information that could influence the education scenario, such as investment in education or the PISA test results, among others.

Table 1: Demographic, Political and education information of Mexico and China

	MEXICO	**CHINA**
Location	North America	Asia
Political system	Representative, democratic and Federal Republic	One-Party State
Area	1, 964, 380 km²	9, 562, 911 km²
Population	127, 540, 423	1, 374, 462, 000
World Economy Place (GDP PPP)	11th	1st
Expenditure on education	5.2% (2013)	4.28% (2014)
PISA test results (2015)	Math: 59th Science: 60th Reading: 58th	Math: 6th Science: 10th Reading: 27th
Languages	Spanish (Of Mexico)	Mandarin and dialects

Religions	The State does not have an official religion Roman Catholicism (83%) Protestant (10%) Other Religions (3%) Without Religion (4%)	The State does not have an official religion Atheist (52.2%) Traditional religions (21.9%) Buddhist (18.2%) Christian (5.1%) Muslim (1.8%) Other religions (<1%)

Source: World bank, National Bureau of Statistics of China (2014), OECD and INEGI (2010)

Some divergences belong to the political organization, expenditure on education and geography. One, Mexico is constituted as an Federal and Democratic Republic, while China is a one-party State lead by the Communist Party. Second, although Mexican territory is among the biggest ones in the world, it is about 4 times smaller than the Chinese.

Mentioning economic and education terms, Mexico invested 5.2% of its Gross National Product (GDP) on education in 2013 (OECD, 2016) while China invested an 4.28% almost the same percentage of its GDP (National Bureau of Statistics of China, 2014). Talking about these divergences, the greatest contrast between these two countries is seen on the academic results on the PISA test which objective is to evaluate the academic performance of 15-year-old students, China gets high results while Mexico maintains clearly lower positions even though its proportional economic efforts.

On the 2012 PISA test China was on top of the results, nonetheless the test was only applied in Shanghai (Territory considered as continental) and could not have been nation-wide representative. By 2015 the test was applied on other provinces such as Beijing, Jiang-

su and Guangdong when the results took continental China to a lower position. In the other hand, Taiwan which is territory of China with independent administration from Beijing, this region got comparatively higher scores.

Mexico was placed around the position number 60 among the countries participating on the 2015 test, getting lower scores even compared to Caribbean and Central American countries. Although Mexican labor market is being proposed to compete to the Chinese one as Mexican economy is expected to lead as emerging economies towards 2030, it can be observed that Mexico is better on reading (423 points), getting a close score to the Chinese reading score (494 points) but worst on math and sciences. Mexican engineering labor market is supplying with labor force its strong industries which demand better prepared individuals on math and sciences.

Table 2: PISA Results 2015 for Mexico and China

	Mexico	**China***
Reading	423	494
Math	408	531
Science	416	518

Source: OECD, 2016. *China is represented by the provinces of Beijing, Shanghai, Jiangsu and Guangdong.

This general overview presenting the most relevant data of each nation confirms the international importance and reaffirms the role of these two economic powers on education. At the same time, this information affirms the importance of teacher initial training as a key element to improve education systems.

2. *Object of study and methodology*

This research is framed by a compared methodology developed on four phases: description, interpretation, juxtaposition and comparison. The prospective phase to set proposals of improvement is presented at the end of this document.

This research is focused on the current situation of the two chosen cases of study, Mexico and China. The consulted references are mainly primary, such as national statistics agencies, national education laws or documents and international data such as World Bank and the Organization for Economic Co-operation and Development (OECD).

This document aims to respond the following question: Which are the convergences and divergences between the initial training policies of teachers in Mexico and China? To detect such convergences and divergences beyond the general framework about the two countries presented in the introduction, education proposals have been addressed in four categories: structure of education system, legislation concerning initial training of teachers, curricular design of teachers' training and selection of students for such programs.

3. *Teacher training*

One of the most important phases of teacher training is the initial training which covers three main functions: to educate and train the future teachers (de la Fuente, Caggiano, 2016) with the aim to prepare them for their professional activities (Caggiano, Bellezza, 2017) to prepare them for their activities in the classroom and to let teachers perform their role as agents of

change within the education system (Marim, 2011).

Perrenoud (2000) states that training should prepare the student to reflect about the practices, create models and to perform its capacity of observation, analysis, metacognition and metacommunication. For Imbernón (2000), initial training should also support future teachers with solid notions on sciences, culture and the psychological fields.

A lately relevant tendency is the one conceiving training of teachers as a continuous process (Vaillant, 2002). This perspective proposes the training process before, during and after the initial training. A "continuum of the practice" as named by Schon (1992), in which the subject develops the needed knowledge for the professional life.

In the Mexican case, it is stated that teacher training is conceived as a permanent process of learning, because the skills and knowledge acquired by a teacher is not only the result of initial training but of what is learned during his professional life (Secretary of Public Education, 2003, p. 12).

At the same time, such professionalization is not only related to the national contexts, so what is expected from a teacher during the professional development it is been progressively regulated and delimited to international standards promoted by international organizations (OECD, UNESCO, UNIFEC). This harmonization mainly happens because of the process of globalization and inclusion of the countries to the global markets.

4. *Initial training of teachers in Mexico and China*

4.1 *Mexican scenario*

Mexican education is governed by the Mexican Constitution and by the *"General Law of Education"* approved on 1993, currently valid and with reforms published on march 2017. In its article number 3, the General Law of Education establishes that mandatory education of 15 years starting from the age of 3 years shall be guaranteed and free of charge to population (Ley General de Educación, 1993).

Basic education comprises the period starting from the age 3 to 15 years and sequenced as follows: preschool (3 to 5 years old), primary education (6 to 12 years old) and secondary school (12 to 15 years old), then it comes the high school which is also established as mandatory education (15 to 18 years old) and offered in three different lines of professionalization: General high school, technologic high school and professional technical high school. After this period of 15 years it is offered higher education divided on degree and postgraduate degree. This level is not obligatory but as well as the inferior levels is free of charge to all Mexican citizens.

The General Law of education establishes the general considerations of initial training of teachers on its articles number 20 and 21 and clearly specified on the *"General Law of Professional teaching service"* (Ley General del Servicio Profesional Docente). These articles and the General Law of professional teaching service specify how training should be nationally promoted and are in charge of the Federal and State Governments, both responsible of Universities and education institutes.

Besides these laws, there is a document named *Plan Nacional de Educación* (National Plan of Education) (PNE) that aims to guarantee standards of quality to the national level. The PNE besides establishing methodologic proposals and minimal contents, also establishes the necessary skills, competences, ethics and values to perform as a teacher.

To guarantee and improve quality of education, national and state congresses approved on 2013 the Education Reform presented by the President of Mexico. Among all statements considered on the reform the most important are the ones concerning training and initial training of teachers: one referring to the enrollment which states that through tests and contests, teachers proving greater knowledge and skills will be able to be enrolled in the teaching service and to be promoted to management and direction positions on basic and higher State education and a second establishment that states that there will be a mandatory and periodic evaluation for all teachers in the country with the aim to assign them an income, promotion, recognition and permanence on the service (Senado de la República, 2015).

The initial education (training) of teachers of basic education is divided in 6 bachelor degrees: Special education (Education focused on special kids), Sports education (focused on sports to all levels of basic education), Initial (0 to 3 years old), Preschool (3 to 6 years old), Primary (6 to 12 years old), Secondary (12 to 15 years old). According to national statistics, preschool, primary and secondary education are the most demanded training areas, 86% of students enrolled on the teaching service career belonged to these three areas of professionalization (OECD, 2009).

The bachelor degrees of the teaching career service of preschool and primary education are constituted by a total of 4,320 hours while the secondary bachelor degree of 3,780 hours and curricular plans are measured with credits of about 15/16 hours. All the degrees share a 20% of general training within their curricular programs, that is around 800 hours of the curricular design of the degrees. The general training shared among all the degrees refer to content enunciated as follows: knowledge on the philosophical, legal and organizational basis of the Mexican education system, acquisition of a general overview of the problems and policies relating basic education in the country, to analyze topics selected because of their current and past significance to universal history of pedagogy and education and a course of strategies for communication and study. A 65% which comprises around 3,100 hours is focused on each program specific professional training and a remaining 15% belongs to the professional practice which is the first contact between future teachers and the classrooms (Dirección General de Educación Superior para Profesionales de la Educación, 2012).

All the curricular plans of the bachelor degrees for the initial training of teaching comprise the professional practice and recognize the importance for students to work on classrooms leaded by an experienced teacher named "tutor". It is expected from the teachers to become tutors during the professional practices of the future teachers guiding them on the procedures and decision making, transferring their knowledge and experience (Secretaría de Educación Pública, 2004).

Initial training (Education) of teachers is performed in private and public institutions, among the public institutions the public normal universities are the most frequented. Public institutions training teach-

ers are divided on the federal, state and municipal level of government administration. The state level manages the normal universities while the federal administration only sets the curricular programs. There process to access to the superior education for teaching career is based on an exam of general knowledge to prove the minimum knowledge required to be enrolled on the teaching career.

4.2 *Chinese scenario*

The Chinese education system is governed by two laws: the *mandatory education law of the Peoples' Republic of China*, approved back in 1986, and the *law of education of the Peoples' Republic of China*, approved back in 1995. A key element of the first one is the establishment of mandatory education and free of charge within a period of 9 years (article 2), starting at the age of 6 years. This law does not allow hiring kids for jobs on scholar age (article 14). The second law enhances the importance of families to respect the 9 years of mandatory education (article 18) and establishes the 5 phases of the basic education system: infant education (from 3 to 6 years old), primary education (6 to 11 or 6 to 12 years old), secondary (from 11 to 15 or 12 to 15 years old), secondary higher education (from 15 to 18 years old) and university education. This way mandatory education and free of charge comprises from the age of 6 to 15 years old.

Likewise, these two laws establish that teachers of all levels must have specific qualifications designed by the State for each level. As the country's economy emerges, there are also efforts on education quality, the *Law of mandatory education* was amended back in 2006 and used to be framed by 18 articles and now com-

prises 63 articles. One of the new resolutions on teacher training is the inclusion of three levels for teacher of basic education within the professional career service.

These qualifications are explained on the *Law of teachers* (1993), requiring at least a diploma at a school for teachers of infant education, a title certification from a secondary school for teachers of primary education, a certification title of two or three years from a higher education school or university to teach in inferior secondary level and one of 4 years for teachers of higher secondary level. This law also takes into account the opportunity for individuals without any of the certification titles required to be enrolled in the profession of teaching through an examination. Each University have the freedom in their curricular designs but respecting the national curricular plans. Back in 2012 the ministry of education published a document named *"National curricular standards for the training of teachers".* Within this document, Chinese authorities mention the need to guide teacher training towards dynamic practices and continuous learning.

Curricular plans proposed in such document is divided in three phases, plans for infant education, plans for primary education and plans for secondary education. Education plans are measured in credits of 18 hours. Teachers of infant and primary levels are enrolled in programs of 3, 4, and 5 years. The greater differences between the curricular plans for each level are found on the number of credits recommended to dedicate to pedagogy, methodology and classes in the education and teaching field. Teachers of the infant level must get 40 credits in graduate courses of 3 years, 45 credits in bachelor degrees of 4 years and 50 credits in bachelor degrees of 5 years, while teachers of primary level respectively need 20, 24 and 26 credits. In The

other hand, secondary level teacher training is designed to be careers of 3 and 4 years. Among all the levels, infant, primary and secondary, institutions must add to the curricular plan a period of professional practices of at least 18 weeks (Ramirez and Marim, 2016).

The universities have the responsibility to establish their own programs within these criteria. The 5 areas in which the training of all levels is similar are: (1) development and learning, (2) fundamentals of infant, primary and secondary education, (3) Guide and activities of students of infant, classes and guide in primary and secondary education, (4) students of infant education, family and society for infant level, or mental health and guide to moral in primary and secondary and (5) ethics and professional development (Ramirez and Marim, 2016).

Selection of future teachers is made based on the results of the Chinese national exam to enroll in the university which is called *Gaoka*o (高考) (Higher education exam). Another way for future teachers to be able to enroll is by having high results on the *Zhongkao* (中考) (secondary education exam) which allows not to present the *Gaokao* exam (Ramirez and Marim, 2016).

Teachers commonly get trained in normal universities, one of the most popular and prestigious is the Beijing Normal University and the Shanghai normal University. There is also the opportunity to get enrolled in schools of education within universities and in some institutes and professional schools.

5. *Juxtaposition and comparison*

5.1 *Structure of the education system*

Both nations have a period of mandatory educa-

tion with some divergences within the time-lapse of development (Table 3). In Mexico, mandatory education lasts 15 years and according to the International Standard Classification of Education (ISCED)[2] this period of 15 years beginning at the age of 3 years correspond from ISCED 0 to ISCED 3. In the other hand, in China, mandatory education lasts 9 years and comprises from ISCED 0 to ISCED 2. This means that mandatory education in Mexico is 6 years longer than in China. Nevertheless, analyzing the data already mentioned in this document, having a longer period of mandatory education does not guarantee better results on evaluations such as PISA. This divergence may explain a part of each country national labor market organization. Either way, it is necessary to complement such education with well-prepared professionals of education, curriculums and social valorization of education.

Both Mexico and China converge on the division of the infant education level into two levels. In China, education from 3 years old is considered to be provided by families or advisors but not mandatory. Within the same segment from 0 to 6 years old corresponding to ISCED 0, Mexico establishes from 0 to 3 years old as not mandatory but unlike China, Mexico establishes as mandatory the preschooler education from the age of 3 to 6 years old.

On the next levels of education, it can be observed that in Mexico education corresponding to ISCED 1 and 2 is divided in two levels, primary and secondary education. The primary education corresponds to ISCED 1, lasts 6 years and its aimed for students from the age of 6 to 12 years old while the secondary education corresponds to ISCED 2 and part of ISCED 3,

[2] 2011 edition.

lasts a period of 3 years and its aimed for students from the age of 13 to the 15 years old. Both countries diverge on the denomination because in China the period corresponding from 6 years old to 15 years old would correspond to primary and inferior secondary education, nevertheless in both nations the ISCED 1 and ISCED 2 corresponding levels are mandatory.

Another divergence is that in Mexico the ISCED 3 is denominated as high school while in China is named superior secondary and in China is not mandatory, is considered post mandatory education, while in Mexico is mandatory. In China ISCED 3 corresponds to adolescents from the age of 15 to 17 and in Mexico from the age of 16 to 18 years old.

Table 3: Education systems of Mexico and China

<table>
<tr><th>MEXICO</th><th>ISCED</th><th>AGE</th><th>ISCED</th><th>CHINA</th></tr>
<tr><td rowspan="3">Infants and maternal</td><td rowspan="6">ISCED 0</td><td>0</td><td rowspan="6">ISCED 0</td><td rowspan="3">Preschooler</td></tr>
<tr><td>1</td></tr>
<tr><td>2</td></tr>
<tr><td rowspan="3">Preschooler (Mandatory)</td><td>3</td><td rowspan="3">Infant Education</td></tr>
<tr><td>4</td></tr>
<tr><td>5</td></tr>
<tr><td rowspan="6">Primary Education</td><td rowspan="6">ISCED 1</td><td>6</td><td rowspan="6">ISCED 1</td><td rowspan="6">Primary Education</td></tr>
<tr><td>7</td></tr>
<tr><td>8</td></tr>
<tr><td>9</td></tr>
<tr><td>10</td></tr>
<tr><td>11</td></tr>
<tr><td rowspan="3">Secondary Education</td><td rowspan="3">ISCED 2</td><td>12</td><td rowspan="2">ISCED 2</td><td rowspan="2">Inferior Secondary Education</td></tr>
<tr><td>13</td></tr>
<tr><td>14</td><td rowspan="2">ISCED 3</td><td rowspan="2">Superior Secondary Education</td></tr>
<tr><td rowspan="3">High School</td><td rowspan="3">ISCED 3</td><td>15</td></tr>
<tr><td>16</td></tr>
<tr><td>17</td></tr>
<tr><td></td><td></td><td>18</td><td></td><td></td></tr>
</table>

Source: Self elaboration.

5.2 *Legislation on education (training) of teachers*

Both countries established a legislation to rule the initial training of teachers (Table 4). China legislated to improve Chinese education quality and teacher training back in the 90's. On 1986 the Law of mandatory education of the Peoples' Republic of China enhanced the fact that teachers should have had specific qualifications without arguing which qualifications in specific. Such qualifications where developed on the Law of teachers of 1993.

In the other hand, Mexico also legislated on the decade of 1980 and 1990 to improve Mexican education system and quality. In 1984 Mexico established high school as a minimum mandatory to be enrolled in the normal schools and elevating them to universities and their curricular programs to bachelor degrees in education. Nevertheless, the economic crisis of Mexican economy on the 1980-decade due to the orientation towards the neoliberal system did not let the reforms be successfully applied until the 1990-decade. (Castro S., Marco A., 2003). Mexico continue to reach improvements on teacher training, in 2013, with the aim to provide higher quality education the country applied the new reforms on teacher training mentioned overview mentioned before in this document.

As convergence, it can be said that in the 1990-decade both nations dedicated special attention to teacher training. During this period requirements for future teachers were set and both countries started to carry out new strategies to prepare active teachers that were not trained or that did not were within the new national parameters of qualifications. Both Mexico and China faced a numerous quantity of teachers that did not covered the law specifications. Even today after

Mexico applied the education reforms of 2013, Mexican education system faces this context and performs continuous training on different fields. China also keeps training Chinese teachers with continuous education. China also made a new proposal con teacher training back in 2012. The results of the reforms and improvements to training in both nations might not be seen until the decade of 2020, nevertheless it is important to emphasize the efforts to improve education and teacher training in both emerging economies.

Table 4: National Legislation on education (training) of teachers

	MEXICO	**CHINA**
Specific Legislation on training of teachers	General Law of Education (1993) General Law of Professional teaching service (2013) National Plan of Education	Law of mandatory education of the Peoples´ Republic of China (1986) Law of education of the Peoples´ Republic of China (1995) Law of teachers (1993) National curricular standards for the teacher training (2012)
Minimum qualifications of training of teachers	Bachelor degree (ISCED 6)	Infant and primary: ISCED 3 to ISCED 6 Inferior Secondary: ISCED 4 to ISCED 6 Superior Secondary: ISCED 6 to ISCED 7

Source: Self elaboration.

5.3 *Curricular design*

Table 5 show the divergences and convergences between the two countries structures of initial training of teachers. China establishes two models, *concurrent* when referring to the accomplishment of a degree and the specialization on pedagogy and training at the same time and the *consecutive* model when first a degree must be accomplished and later a master on pedagogy. Mexico established the *concurrent* model in which every student that have accomplished a teaching degree of 4 years has the right to perform as teacher.

Both Mexico and China offer a degree title for preschooler education and another for primary school education. Therefore, students must choose one of the training programs for their professional teaching career. The specialization on education of different levels is based on the assumption that different levels require different attention, needs and pursue different goals.

Another convergence on curricular programs for the training of teachers is the period of studies. The common duration of the training programs in both countries is 4 years. Also, Mexico and China establish a period of 18 weeks (one semester) for the accomplishment of professional practice. In Mexico, practices are measured by hours, a total of 4 hours every day in a period of 18 weeks.

Table 5: Curricular organization of teacher training

	MEXICO	CHINA
Model	Concurrent (Mandatory Bachelor Degree on education field)	Concurrent (Bachelors with specialization on teaching) and Consecutive (Bachelor + Master)
Training time (Years)	Preschooler, Primary, Secondary and Highschool: Bachelor degrees of 4 or 5 years	Infant and primary: minimum of 3 years Inferior Secondary: 3 o 4 years Superior Secondary: 4 or more years
Training of professional practices (Hours credits)	18 weeks (1 semester) (Around 400 hours)	18 weeks (1 Semester)

Source: Self elaboration

6. *Conclusions and prospective*

Regarding the general overview, the fact that Mexico and China stand out to a global level due to their territorial size, demographics and economic development show the complexity in education management and policies that must be faced by the public administration. This complexity is also due to social and cultural aspects. Therefore, in spite of the need of investments on education, it is important to remember that academic results depend on multiple factors. Mexico shows an inconsistency between investment and academic results while China obtains a high performance. In this sense, it is necessary that Mexican government invest not only economic resources on education but also invest on mechanisms that help on the improvement of academic results and training of its citizens. Latest Mexican gov-

ernment education reforms give a sign that these mechanisms are on process of execution.

Mexico establishes mandatory and free education within a period that begins at preschooler education and finishes at high school. In this sense, the duration of the mandatory and free education is one of the challenges that China faces. Superior secondary in China (High school in Mexico) is considered a level for students that pretend to continue their superior studies and therefore, it is not mandatory nor free of charge. The reason of the divergence on this matter might be explain on the labor force organization and industries needs of each country, anyhow, establishing mandatory and free education until the age of 18 it provides the opportunity of education to the poor. A long period of mandatory education does not guarantee a high-quality education.

Training of teachers in Mexico and China is similar when talking about the concurrent model (degree of 4 years). Even on the professional practice both nations share a convergence of 18 weeks of training. Giving the chance to students to contribute and participate in teaching practices during their studies would transfer knowledge from good and experienced professionals. Such practices are already being carry out in Mexico. In this sense, it can be observed that the initial training is a very important element for the students that chose the profession of teaching.

After analyzing legislation in both nations, it can be observed that both Mexico and China are pursuing a continuous improvement in one of the key elements of the education systems, which is the training of teachers. Latest legislation concerning training of teachers have been published in both countries, in 2012 in China and in 2013 in Mexico, and the results are yet to be seen in the next decade.

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