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The Role of Quality Education in the Economic Development of Mexico

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Claremont McKenna College

The Role of Quality Education in the Economic Development of Mexico

Submitted to
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by
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Abstract

Mexico's education system ranks among the lowest in terms of quality and achievement levels. Given the importance of education for a country's economic development, it is crucial to understand how improvements in Mexico's education quality can result in economic growth for the country. This thesis aims to create awareness about how the quality of learning rather than total schooling can result in improving Mexico's economic development. First, a general literature review provides significant findings of the quality of education, the difference between learning and schooling, and educational equity, and its effects on economic development. Moreover, a detailed overview of the Mexican education system demonstrates critical aspects that distinguish Mexico's public education system. Finally, various issues facing Mexico are introduced, including violence and corruption, that can impact Mexico's economic underperformance by enhancing education quality. This thesis concludes with three policy recommendations for tackling Mexico's poor education quality while being strategic on their potential economic benefits.

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Introduction

Without equitable access to high-quality education, Mexico's education system falls behind on most education standards, including attainment levels and assessment scores. About 53.9 percent of men and 59.8 percent of women in Mexico graduate from upper secondary school over their lifetime, placing Mexico near the bottom in education attainment levels compared to other countries.¹ Consequently, Mexico's poor education quality impacts its international competitiveness, and hence, their economic development.

According to Brazilian educator and philosopher Paulo Freire, "Education does not transform the world. Education changes people. People change the world."² Education can serve as a growth engine for a country by enhancing the skills of its citizens, but education itself cannot promote economic growth without high quality standards, practices, and policies. This is the case in Mexico. Although 5.239 percent of Mexico's total government expenditure goes towards education, Mexico is not producing high enough levels of educational attainment due to poor quality education and educational inequities.

Inequality in education quality hinders Mexico's economic development. Disparities exist in the levels of education between the rich and the poor. This thesis demonstrates how providing universal primary education is an acceptable first step, but it will not contribute to economic development if education quality is not taken into account. For years, countries have focused on increasing school enrollment, while paying

¹ OECD (2019), Secondary graduation rate (indicator). doi: 10.1787/b858e05b-en (Accessed on 20 April 2019)

² "Educational Programmes," CDR Equipping.

less attention to the actual learning outcomes of children. Findings from various studies suggest that “knowledge rather than time in school is what counts for economic growth... Economic growth is strongly affected by the skills of workers.”³ Mexico’s labor force should acquire competitive skills from additional years of schooling to value the education investment. Data demonstrates the misalignment between higher education’s curriculum and the skills in demand from the labor force.

Even after Enrique Peña Nieto's promise to improve Mexico’s education system by introducing education reforms in 2013, there has not been tremendous improvement. Levels of violence have exponentially grown, and the downturns in the Mexican economy resulted in the Mexican pesos’ volatility these past six years. Mexico’s education system plays a crucial role for the country’s economic growth. This thesis addresses why this is the case.

This thesis will argue how investing in higher quality education in Mexico can bring economic benefits by increasing productivity. The first chapter will provide a general literature overview on the importance of education on economic development, while emphasizing the importance of quality education and differences between schooling and learning. The following chapter discusses Mexico’s education system in detail while providing findings of Mexico’s educational achievement and quality of education. It proceeds to consider possible factors for Mexico’s economic underperformance as it relates to higher education opportunities, Mexico’s business

³ Eric A. Hanushek and Ludger Woessmann, “Education and Economic Growth.” *International Encyclopedia of Education*. (Oxford: Elsevier, 2010), 252.

competitiveness, and violence. It addresses how increasing levels of education can reduce crime and violence in Mexico, develop skills and competencies that can improve Mexico's competitiveness and productivity. This thesis concludes with three policy recommendations for enhancing the quality of education and professional development opportunities that can drive economic growth in Mexico.

Chapter I: General Literature on Education and Economic Development

This chapter will focus on the foremost education characteristics that impact a country's economic development and growth. There are three fundamental indicators of development: real income, health, and education.⁴ This thesis will focus on education as measured by literacy and schooling, but an additional measure will be added: the quality of learning. Distinguishing between schooling and learning is important. Schooling is the time a student spends in the classroom, while learning is the tangible skills that a student acquires from attending school.⁵ Learning is much more significant in measuring the educational system's effectiveness. Education benefits arise from skills developed during school. Hence, schooling affects economic growth through the actual learning acquired in schools.⁶ From 1970 to 2015, there was a more significant increase in annual GDP per capita growth from an increase in test scores rather than an increase in years of schooling.⁷ Therefore, the quality of education should be taken into account when determining an education system's economic impact. This chapter will describe the importance of education for economic development, how teacher quality plays a role in the overall education quality, the result of learning outcomes, the quality of education systems, and the effect educational equity has on economic growth.

⁴ Michael P. Todaro and Stephen C. Smith, *Economic Development*. Pearson Series in Economics. Boston: Pearson (2015), 45.

⁵ World Bank, *World Development Report 2018*, 46.

⁶ Ibid.

⁷ Ibid.

In the context of this paper, economic growth refers to the increase in a country's production over time. I will argue that improving the quality of education results in economic growth for a country, in this case, Mexico. It is crucial to see the cycle of economic growth with education. For example, poverty and education are so interrelated that they create a continuous cycle since poverty results in less education, while less education impedes escaping poverty.⁸ This affects economic growth because those with lower education levels often contribute less to the overall economic activity of a country. Hence, by increasing educational attainment levels and improving education quality, this will most likely lead to economic growth. There is higher income inequality in countries with a high share of people without upper secondary education. For instance, this is the case for Brazil, Costa Rica, and Mexico.⁹ According to the OECD Education at a Glance 2018, a country invests in educational institutions to promote “economic growth, enhance productivity, contribute to personal and social development, and reduce social inequality.”¹⁰ All these positive results from investments in educational institutions will be analyzed further in this chapter and related to their effect on a nation's economic development.

The Importance of Education

Education has become an essential determinant for driving economic development. The 20th century is known as the “Age of Human Capital” since the determinant of a country's development is associated with how well they promote the

⁸ Ines Aguerrondo. *Escuela, Fracaso y Pobreza: Como salir del círculo vicioso*. Washington: Organización de los Estados Americanos, (1993).

⁹ OECD, *Education at a Glance 2018: OECD Indicators*, OECD Publishing, (2018).

¹⁰ Ibid.

development of their skills and knowledge, while also improving the health and education of the population.¹¹ Across the world, education is identified as a basic human right and is known to raise human capital, productivity, incomes, employability, and economic growth.¹² An equal distribution of education is also crucial for the impact on per capita income.¹³ A country's economy will not benefit as much from having a few regions with high levels of education, while most areas deal with deep poverty and low levels of education. According to the World Bank, one extra year of schooling increases hourly earnings by 9%; this results in increases in economic growth, innovation, the strength of political, social, and financial institutions.¹⁴ Higher levels of education raise incomes and can be associated with more extensive access to jobs in the formal sector.¹⁵ More top access to and eligibility for jobs in the formal sector, by itself, can improve the living conditions and quality of life of those who might have been in the informal sector before due to low levels of education. The World Development Report 2018 mentions that education can relate to an increase in incomes. The report says that in many developing countries with large informal sectors, education can promote a pathway to full-time jobs in the formal sector, which can positively impact the country's emerging economies. However, investments in human capital can easily fall through and have no impact on economic growth if people do not apply that knowledge in competitive

¹¹ Ilhan Ozturk, "The Role of Education in Economic Development: A Theoretical Perspective," *Journal of Rural Development and Administration*, vol. 33 (Winter, 2001), 2.

¹² World Bank, *World Development Report 2018*, (2018), 38.

¹³ Ilhan Ozturk, "The Role of Education in Economic Development: A Theoretical Perspective," *Journal of Rural Development and Administration*, vol. 33 (Winter, 2001), 3.

¹⁴ World Bank, *Education Overview*. <https://www.worldbank.org/en/topic/education/overview>

¹⁵ Ibid.

markets.¹⁶ Therefore, it is key to adequately prepare and train people to effectively use their skills and knowledge to provide economic benefits to the country.

The right to education should be synonymous with a proper quality education. Quality education means that learners should be acquiring “foundational literacy and numeracy skills,” that can prepare them for future educational opportunities.¹⁷ This means that students should be acquiring tangible benefits from spending hours inside the classroom rather than working and missing out on having a contribution to their family’s income. The 2030 UNESCO (United Nations Educational, Scientific, and Cultural Organization) Agenda for Sustainable Development education goal is to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”¹⁸ Equitable and inclusive quality education is especially important for developing countries that have different qualities of education from the highest-ranking schools compared to the lowest-ranking schools because they should provide not only an opportunity to attend school but to gain valuable skills from it. It is important to note that education by itself is not the sole factor that can impact an economy. Other factors should be taken into consideration, such as the quantity and quality of investment in education, as well as the way that policies get implemented.¹⁹

¹⁶ Ilhan Ozturk, “The Role of Education in Economic Development: A Theoretical Perspective.” *Journal of Rural Development and Administration*, vol. 33 (Winter, 2001), 3.

¹⁷ UNESCO, “Education 2030: Incheon Declaration and Framework for Action for the Implementation of Sustainable Development Goal 4,” (2016).

¹⁸ Ibid.

¹⁹ Ilhan Ozturk, “The Role of Education in Economic Development: A Theoretical Perspective,” *Journal of Rural Development and Administration*, vol. 33 (Winter, 2001), 4.

Education can provide many monetary and nonmonetary benefits to both individuals and communities. First of all, education can provide an individual or a family with higher probability of employment, greater productivity, higher earnings, and reduced poverty, while also contributing to better health, improved education and health of children, greater resilience and adaptability, better choices, and greater life satisfaction. Furthermore, some of education's benefits to a community include higher productivity, more rapid economic growth, poverty reduction, and long-run development.

²⁰ Some of the nonmonetary benefits include increased social mobility, better-functioning institutions, higher levels of civic engagement, and reduced negative externalities.²¹

Education builds human capital. This happens by improving people's capacity to adapt and absorb new technologies or driving technological advances that promote long-term growth.²² As a country implements new technologies, it becomes more integrated into the world economy, and its citizens become more active and increase their productivity, which influences their overall economic growth.

The Millennium Development Goals introduced by The United Nations have focused solely on primary school completion; however, this goal has moved more towards measuring the actual outcomes of learning.²³ For instance, a particular school might develop the knowledge and skills at the level of that specific level in school. However, another school might not produce the same skills and knowledge that pertain to

²⁰ World Bank, *World Development Report 2018*, 39.

²¹ Ibid.

²² Ibid.

²³ Deon Filmer, Amer Hasan, and Lant Pritchett, "A Millennium Learning Goal: Measuring Real Progress in Education," *Center for Global Development*, (2006), 3.

that same level. Even though students received the same amount of years of schooling, their intellectual capacities are at different levels because of the quality of learning that they received at their specific school. A study measured the quality of education as a simple average of the mathematics and science scores over all the international tests. It determined that controlling for the initial level of GDP per capita and years of schooling, the test-score measure, which represented the quality of education, showed a statistically significant effect on the growth in real GDP per capita in 1960-2000.²⁴ Although universal primary education has been a great accomplishment, this alone does not have a substantial impact on economic growth because of the current issue of disparities and inequities mentioned earlier.

When looking at economic development and growth, education and health are interrelated and equally important. Education provides people with the skills to utilize technology and the capabilities to promote growth in a country, while good health is necessary for productivity and for acquiring an education.²⁵ Having poor health prevents people from attending a school, or it can also increase the rate of depreciation of education capital when knowledge is not adequately used.²⁶ Studies of developing countries have shown that health can affect school performance; to improve the effectiveness of schooling, children's health should be considered.²⁷ Higher incomes do not mean health and education will be enhanced, instead, governments play a crucial role

²⁴ Eric Hanushek and Ludger Wobmann, "The Role of Education Quality for Economic Growth," *World Bank Policy Research Working Paper*, No. 4122. (2007).

²⁵ Michael P. Todaro and Stephen C. Smith, *Economic Development*. Pearson Series in Economics. Boston: Pearson (2015), 382.

²⁶ *Ibid*, 384.

²⁷ *Ibid*, 386.

in implementing policies that will prioritize education and health in developing countries.

²⁸ Once again, the way that policies are implemented influences the quality of education provided.

Teacher Quality and Motivation

Even if a country invests significantly in their education system, there is no way of making an impact without acknowledging the power, responsibility, and influence that teachers have in the quality of education. According to the EFA Global Monitoring Report in 2012, “At least 250 million primary-school-aged children, more than 50% of whom have spent at least four years in school, cannot read, write, or count well enough to meet minimum learning standards.”²⁹ This statistic is alarming and shows that most education systems across the world are failing to adequately teach necessary skills that can positively impact the lives of children, especially those from poor, underserved backgrounds. Inadequate skill development can be traced back to the resources available at schools or districts, such as the teacher’s quality and preparation working at these underserved locations. Extensive research shows that teacher quality is one of the most notable contributors to student achievement and can largely influence education’s ability to provide economic and social benefits.³⁰ A significant finding is that poor student learning results reflect teachers’ failure to engage students in learning, which is a skill

²⁸ Michael P. Todaro and Stephen C. Smith, *Economic Development*. Pearson Series in Economics. Boston: Pearson (2015), 424.

²⁹ UNESCO, “Youth and Skills: Putting Education to Work,” *EFA Global Monitoring Report*, (2012), 126.

³⁰ Barbara Bruns and Javier Luque, “Great Teachers: How to Raise Student Learning in Latin America and the Caribbean,” *World Bank Group*, (2015), 5.

that well-trained teachers acquire in teacher training programs.³¹ Teachers qualifications and preparation is a crucial aspect in determining the quality of education.

The teacher absentee problem has been a serious problem in many developing countries. Teacher attendance has a detrimental effect on the quality of education that children receive, especially in developing countries, which further hurts the economic growth of a country. Incentivization programs for teachers have been found to harm students education rather than improving their education. For example, there was a teacher incentive program in Mexico that saw the increase in student learning was due to student cheating rather than improved teacher quality.³² When teacher incentives increased, teacher cheating in the United States also increased.³³ Teacher absenteeism is costly for countries that are investing a large portion of their federal budget in education. According to the World Bank's section on understanding poverty,³⁴ if teacher absenteeism is reduced, this would be more than ten times more cost-effective at improving student-teacher contact time rather than hiring additional teachers.

On top of teacher absenteeism, a big issue facing many schools is lost teaching or learning time. According to The World Bank, 20 percent of potential instructional time is lost, which equals one less day of instruction a week.³⁵ This lost instruction time results from classroom management activities and takes up about 24 to 39 percent of total class time in Latin American and Caribbean countries (LAC) compared to the 15 percent

³¹ Barbara Bruns and Javier Luque, "Great Teachers: How to Raise Student Learning in Latin America and the Caribbean," *World Bank Group*, (2015), 5.

³² World Bank, *World Development Report 2018*, 139.

³³ *Ibid.*

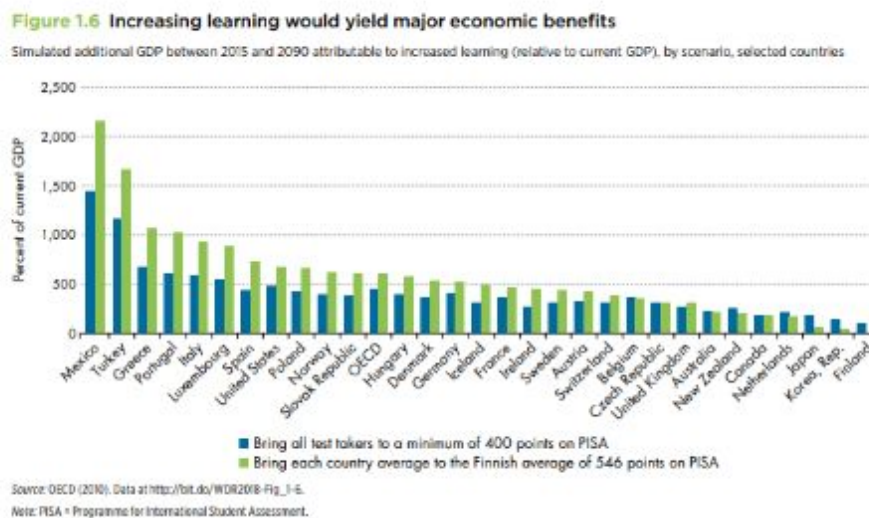
³⁴ World Bank, *Understanding Poverty, Teachers*.

³⁵ *Ibid.*

benchmark.³⁶ The cumulative lost learning time negatively impacts the overall learning outcomes of children in these countries. There is a pattern between the instruction time in high performing schools compared to low performing schools. In chapter 4, this paper will examine policy recommendations for improving the recruitment and retainment of high-quality teachers.

Learning vs. Schooling

As mentioned earlier, learning is different from schooling. Learning is much more valuable and impactful in the educational outcomes of children. The figure below from the OECD World Development Report 2018 demonstrates that increasing learning in various countries increased GDP.³⁷



³⁶ Barbara Bruns and Javier Luque, “Great Teachers: How to Raise Student Learning in Latin America and the Caribbean,” *World Bank Group*, (2015), 12.

³⁷ OECD, “Increasing learning would yield major economic benefits,” *World Development Report 2018*, (2018).

School-based factors that impact learning are essential to study when observing the quality of education. Teachers are the most significant source of impact who can improve learning for children.³⁸ However, not all schools are receiving the best quality teachers, which can further hinder the learning of many children who might not be learning from the most educated and prepared teachers.

Skill development is a worthwhile investment that directly impacts the economic growth of countries. It mainly affects disadvantaged young people, whose capabilities are overlooked. First of all, developing countries have fewer resources to provide equal educational opportunities to all children. A vital education component is to focus on increasing retention and student engagement. A possible way is to make the curriculum more relevant to the real world and provide a range of different interests.³⁹ This thesis concludes with a policy recommendation regarding the implementation of a relevant curriculum.

Education Systems

Education systems experience many changes; therefore, modifications to their internal and external structures are necessary.⁴⁰ When looking at an education system, a systems approach should be taken to understand the interactions between all the actors in an institution, including students, politicians, and educators.⁴¹ An education system faces particular challenges in four areas according to the World Development Report 2018. The

³⁸ Pauline Rose and Benjamin Alcott, "How can education systems become equitable by 2030?" *Health & Education Advice & Resource Team*. (2015).

³⁹ UNESCO, "Youth and Skills: Putting Education to Work," *EFA Global Monitoring Report*, (2012), 237.

⁴⁰ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 1.

⁴¹ World Bank, *World Development Report 2018*, 172.

first relates to education systems' learning objectives and responsibilities because many times, learning goals are missing or even if they exist, system actors are unclear about their roles and responsibilities. The second challenge is the lack of accurate, credible information and metrics on the effectiveness of a specific education system. The third area is finance, which refers to inadequate education funding. Lastly, incentives in an educational institution can be an issue because they are often not linked to actual learning. Education systems should realign their learning objectives, metrics, and incentives to have further impacts on a country's economic growth.

An education system can either be reliable and promote practical learning outcomes that can contribute to an economy's productivity, but it can be so weak that any investment in funding for education puts a country further behind. Funding allocations for pre-primary, primary, secondary, and tertiary education vary among countries. Some governments provide a significantly more substantial amount of funding to tertiary education than elementary education. This additional funding in tertiary education may be an advantage if, for example, the funding includes support for science and technology and connects to a country's development strategy. However, the enormous funding in tertiary education might be a disadvantage if there is a small portion of students at the tertiary levels. This can take away from educational needs at the primary and secondary levels since it is fundamental to create a strong foundation of basic math and reading skills at the primary levels for students succeed at higher levels of education. Also, affluent families have more advantages to get into a university and receive those benefits

as opposed to underprivileged families.⁴² Countries should be strategic about how they distribute percentages of government expenditures between primary, secondary, and tertiary education by reassuring that their investments will provide future economic benefits. Mexico's government expenditure per student, measured as a percentage of GDP per capita, is substantially higher for tertiary education (37.6% in 2015) compared to primary (14.9%) and secondary education (15.6%).⁴³ The following chapter will analyze whether this is an effective strategy and investment for Mexico.

An education system has the power to provide equal opportunities to the rich and poor in a country. The achievement gaps and school enrollment levels among the rich and poor signify that education systems are not effective in providing an equitable education, especially in least developed countries (LDCs).⁴⁴ There is a strong correlation between educational levels of children and their parents, which can result in a continuous cycle of lower levels of education in underserved, poor regions where education systems are underfunded.⁴⁵ If education systems fail at providing practical knowledge to move up the ladder, then those with few resources will continue to be stuck in an economy's informal sector without contributing significantly to the economy's productivity in the formal sector.

The fast-paced rate of technology can, "improve efficiencies and productivity, make knowledge more accessible, and scale solutions to pressing social and

⁴² Mark Hanson, *Economic Development, Education and Transnational Corporations*. (London: Routledge, 2007), 81.

⁴³ The World Bank Data, *Education: Mexico*, <https://data.worldbank.org/topic/education?locations=MX>.

⁴⁴ Mark Hanson, *Economic Development, Education and Transnational Corporations*. (London: Routledge, 2007), 81.

⁴⁵ *Ibid.*, 82.

environmental problems.”⁴⁶ Education systems have a role in taking full advantage of these technological advancements to further develop their economies. Educating citizens to implement these technologies can bring positive economic benefits to a country. Furthermore, universities and other tertiary institutions should implement an expansion of technology programs. Technology’s economic benefits increase the demand of people in technology in a country because it is a positive investment. The OECD has found that increased levels of tertiary education can be beneficial for an economy because “flows of university graduates are an indicator of a country’s potential for diffusing advanced knowledge and supplying the labor market with highly skilled workers.”⁴⁷ New technologies and higher education demand should be intertwined since they can result in positive economic growth and benefits.

Incentive Programs

Countries need to find ways of increasing the years of schooling that youth attain. An example of an incentive that they provide is through conditional cash transfers (CCTs) which are anti-poverty programs that encourage and financially incentivize families to prioritize health and education in developing countries. These programs usually rely on school enrollment, attendance of 80 to 85 percent, and performance measures.⁴⁸ Many states have adopted some CCT program, and they have helped to reduce inequality, especially in Latin America. One of the most successful CCTs has been Mexico’s PROGRESA or Oportunidades program. Many times poor quality

⁴⁶ Inter-American Development Bank, “Development Effectiveness Overview 2018,” (September 2018).

⁴⁷ OECD, *Science, Technology and Industry Scoreboard 2003* (Paris: OECD Publications, 2003), 50.

⁴⁸ Ariel Fiszbein and Norbert Schady, “Conditional Cash Transfers,” (Washington, D.C: The World Bank, 2009).

services result in lower outcomes from CCTs because even though more children are attending school, they are not fully benefiting from that further education because they are not learning as much as they should. There is evidence that PROGRESA increased years of schooling for Mexican children, but it did not improve assessment scores.⁴⁹

Incentive programs should be strategic with how their purposes and objectives will result in tangible benefits for education achievement in a country.

Educational Equity

The quality and quantity of schooling are both critical for the development of a country. However, educational equity in a country is also an aspect of an education system that often gets overlooked. Equity in education means equality of educational opportunities, which often result from students of different socio-economic status.⁵⁰

There are children from high-income backgrounds who receive great access to resources and high performing teachers, while children from low-income families living in underserved communities receive fewer resources and less qualified teachers. Even though access to education has increased for mostly everyone across the world throughout the years, there still exist inequities in school attainment when comparing socio-economically advantaged people from socio-economically disadvantaged people.⁵¹

Clearly, the lack of advancement opportunities for impoverished communities further impedes these children from contributing to a country's productivity. Socio-economically

⁴⁹ Ariel Fiszbein and Norbert Schady, "Conditional Cash Transfers," (Washington, D.C: The World Bank, 2009), 21.

⁵⁰ OECD, *Equity in Education: Breaking Down Barriers to Social Mobility*, (Paris: OECD Publishing, 2018).

⁵¹ *Ibid.*, 72.

disadvantaged students who attend disadvantaged schools face a “double disadvantage.”⁵²

Teacher quality has greater importance on the achievement of disadvantaged students.⁵³

A major focus on educational equity is important because “inequitable education and career opportunities - shaped by factors such as race, gender, or socio-economic status - can create inefficiencies that hinder economic growth, as they lead to significant misallocations of skills and talent.”⁵⁴ Hence, it is a country’s education system’s responsibility to fill the gap in the inequities that students have faced. This not only benefits the individual, but the entire nation’s economic prosperity. Referring to teacher quality at disadvantaged schools, teachers and staff often have lower expectations for their students, which further hinders their academic advancement and skill development.

⁵⁵ To ensure equity in an education system, school administrations need to reexamine teacher hiring and selection to ensure an equitable allocation of qualified teachers in disadvantaged areas, as well as with other resource allocations.⁵⁶

These educational inequities are often the difference between urban and rural communities. Injustices also occur through ethnic and linguistic discrimination, such as the language barrier in indigenous communities in Mexico and other parts of Latin America. Country data shows that the “rural/urban gaps widen through primary school.”⁵⁷ Evidence also suggests that children learn less when their household language is different

⁵² OECD, *Equity in Education: Breaking Down Barriers to Social Mobility*, (Paris: OECD Publishing, 2018), 120.

⁵³ *Ibid.*, 132.

⁵⁴ *Ibid.*, 142.

⁵⁵ Andreas Schleicher, *Equity, Excellence and Inclusiveness in Education: Policy Lessons from Around the World*, (Paris: OECD Publishing, 2014).

⁵⁶ *Ibid.*, 104.

⁵⁷ Pauline Rose and Benjamin Alcott, “How can education systems become equitable by 2030?” *Health & Education Advice & Resource Team*. (2015), 7.

from their classroom instruction language.⁵⁸ Education systems and government policies need to focus on acknowledging the variation in the demographics and income levels to determine how to provide an equitable quality of education for all.

The following chapter will focus specifically on Mexico's education system and will go into detail about specific characteristics result in poor education quality. It will further analyze some of the aspects of quality education mentioned in this chapter, but relating it specifically to Mexican education.

⁵⁸ Pauline Rose and Benjamin Alcott, "How can education systems become equitable by 2030?" *Health & Education Advice & Resource Team*. (2015), 7.

Chapter II: The Mexican Education System Overview

This chapter will give a brief overview of the Mexican education system structure, as well as provide insight and statistics about overall education attainment levels in Mexico. It is meant to offer an understanding of the current conditions of Mexico's education system.

Background on Mexico

Mexico is the least educated country from the three North American countries. It has one of the world's largest economies and is considered a regional power and middle-ranking power in the world. Mexico was the first Latin American country to join the Organisation for Economic Co-operation and Development (OECD) in 1994.⁵⁹ The Mexican economy is dependent mainly on Mexico's North American Free Trade Agreement (NAFTA) partners.

Mexico's republic includes 31 states and a federal district, totaling 2,457 municipalities. The president of Mexico is elected for one six-year term. Andrés Manuel López Obrador (AMLO) is the current president who took office on December 1, 2018. The federal Secretariat of Public Education (SEP) is the branch of the Mexican federal government in charge of educational policy. As with each new president, there are new policies and reforms they want to follow during their presidential term. Education policies are a significant focus, especially for Mexico, because they are known to be the

⁵⁹ Jose Antonio Ardavin, "Getting to know each other: The OECD and Latin America," OECD Observer, (2012).

most effective in gathering interest. A principal campaign promise for AMLO was to repeal his predecessors, Enrique Peña Nieto, education reform that changed the teacher hiring and retainment process. When Peña Nieto introduced this reform in 2013, teacher protests arose and resulted in even more missed instruction days for Mexican children. AMLO is committed to improving educational opportunities in Mexico through his education plan that includes free education at all levels, scholarships, regionally-based curriculum, and other new initiatives. Regardless of who is in the presidency, Mexico needs to focus heavily on investing in quality education to improve its economic growth.

Brief History of the Mexican Education System

During the Porfirio Diaz dictatorship, the technocrats began the movement for a more “modern Mexico,” which contributed to the start of the Mexican Revolution in 1910 and resulted in the establishment of a national system of education in 1919 by José Vasconcelos.⁶⁰ This national system resulted in the expansion of the system of upper secondary schools or *preparatorias*, and the founding of The National Autonomous University of Mexico to transform the governing elites in the country. Secondly, it aimed to integrate rural populations and ethnic minorities into the broader Mexican society.⁶¹ The issue of integrating minorities into Mexico continues.

Mexico’s *de jure* and *de facto* system of education is used to understand the conditions that have influenced the Mexican education system. The *de jure* education system is federal but allows for the 32 state systems to have their own financial and

⁶⁰ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 8.

⁶¹ Ibid.

operational autonomy.⁶² State governments have little to no funds since the federal government mainly controls finances. Therefore, since their finances are constrained, the states operational autonomy in schools is also restricted. In primary education, the states have to follow individual federal controls, a national curriculum, and national systems of evaluation, which limit their autonomy. Furthermore, the *de facto* centralization consists of corporate arrangements and practices made between the federal administration (SEP) and the national teachers' union (SNTE).⁶³

The rapid expansion of the Mexican population has impacted the education system's quality. Teachers have often had to work double or triple shifts since the supply of teachers has not kept up with the fast-growing population of students.⁶⁴ Before the 1990s, educational reforms focused more on initially preparing teachers, raising teaching qualifications, and involving higher education institutions in improvement.⁶⁵ However, the Carrera Magisterial was introduced in 1993 to improve the standard of teachers in the system through in-service training. As a result, there was a change to educational reforms that would focus more on the pre-service preparation of teachers.

The Carrera Magisterial provided incentives to current teachers and rewarded them for improving their qualifications and skills. It provided a system of horizontal promotion that included eleven steps based on skills and professional development of the teachers; this also included rewards in salary for teachers where they could get an

⁶² David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 10.

⁶³ *Ibid.*, 11.

⁶⁴ *Ibid.*, 13.

⁶⁵ *Ibid.*

additional percentage of their basic teaching salary.⁶⁶ Entry to this program was voluntary. The three strands in the Carrera Magisterial included classroom teachers in the first strand, while the second strand included those who had responsibilities in the development of curricular materials and learning. Lastly, the third strand were those who had responsibility for the professional development of those under their charge.⁶⁷ The problems with the Carrera Magisterial include professional development that does not always mean improved performance and the allocation of insufficient resources to reward those teachers who have not fully participated in the program.⁶⁸ In 2003, the system of horizontal promotion was removed.

It is critical to understand what “the plaza” refers to in the Mexican education system to understand the implications it had on the Carrera Magisterial. “Plaza” refers to a teaching position awarded to teachers in Mexico.⁶⁹ Plazas were usually given based on merit, where high scorers would receive the best plazas. Two issues arose from this process of placing teachers. First off, the most qualified teachers ended up in the most attractive areas, while the less qualified teachers were sent to the most disadvantaged areas.⁷⁰ The other problem was that those with political ambitions could sell, buy, rent, or inherit plazas to work closer to state capitals or where they preferred.⁷¹ This system was never fully implemented, and reforms were introduced to prevent this. At the start of

⁶⁶ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 13.

⁶⁷ *Ibid.*, 14.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*, 15.

⁷⁰ *Ibid.*

⁷¹ *Ibid.*

President Enrique Peña Nieto's administration in 2013, he removed the Carrera Magisterial and replaced it with an Examen Periodico Universal and then through a multiple choice examination and evaluations from superiors based on their quality of teaching, which led to the possibility of removing a teacher if they fail an assessment.⁷²

The General Law of Service in the Teaching Profession (LGSPD) passed in September 2013 and the Coordinacion Nacional del Servicio Profesional Docente (CNSPD) as an effort to replace the Carrera Magisterial in 2015.⁷³ Article 21 of the LGSPD includes the requirements for entry into the teaching profession, and Article 22 consists of the constraints placed on the appointment of individuals placed in vacant positions, as well as the two year induction period for new teachers.⁷⁴

Basic features of the Mexican education system

Mexico's education system includes basic education, upper secondary education, and tertiary education. Basic education, typically for ages 3 to 14, includes pre-primary education, which is optional for 3 to 5-year-olds, mandatory primary education for six years, and lower secondary school for a 3-year cycle. Lower secondary education is provided in three different options: general, technical, and televised.⁷⁵ Upper secondary education is meant to be for three years, and it is considered their high school equivalent, which is not mandatory in Mexico. Upper secondary education provides two options: technical schools or upper secondary education. The majority end up taking the

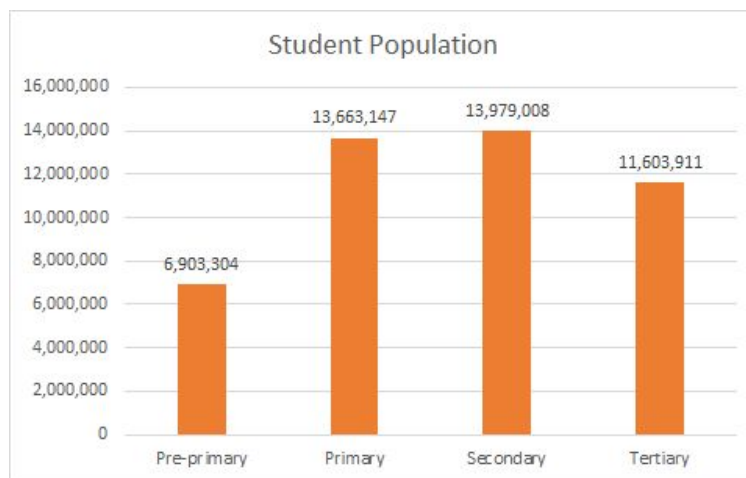
⁷² David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 16.

⁷³ Ibid.

⁷⁴ Ibid.,19.

⁷⁵ OECD, *Strong Foundations for Quality and Equity in Mexican Schools, Implementing Education Policies*, (Paris: OECD Publishing, 24).

bachillerato route, which can potentially lead them to tertiary education. It is important to note that there has been an increase in the demand for technical studies.⁷⁶ Lastly, Mexico’s higher or tertiary education falls into three categories: a system of federal technology institutes, state, and autonomous universities, and teacher-training institutes. There is almost a twofold increase from pre-primary to the primary and secondary population, while it falls substantially for the tertiary student population.



Source: OECD. Number of Students. (2019).⁷⁷

Being so intertwined with the North American Free Trade Agreement (NAFTA) and the Organisation for Economic Cooperation and Development (OECD), education has become fundamental for Mexico’s relations with other countries and their economic success.⁷⁸ Regardless of the large portion of their federal budget dedicated to education, Mexico is still at the bottom of most educational achievement measures.⁷⁹

⁷⁶ Gladys Lopez-Acevedo, and Angel Salinas, “The Distribution of Mexico's Public Spending on Education,” *World Bank Policy Research Working Paper*, No. 2404, (July 2000).

⁷⁷ OECD, Number of students, indicator. (2019). doi: 10.1787/efa0dd43-en

⁷⁸ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 9.

⁷⁹ *Ibid.*, 10.

Mexico invests a large proportion of the federal budget or GDP towards education. Mexico's government expenditure on education as a percentage of GDP was 5.239 in 2015 compared to the world average of 4.814.⁸⁰ Education expenditures as the percentage of total government expenditure have increased over the past years from 18.67 percent in 2009 to 19.02 percent in 2015.⁸¹ As mentioned in the previous chapter, Mexico's government expenditure per student as a percentage of GDP per capita is substantially higher for tertiary education compared to primary and secondary education. However, higher education makes up about 10.6 percent of total student enrollment in Mexico, compared to 69.8 percent of the student population in primary education and secondary education with 14.4 percent.⁸² The issue is that Mexico is devoting a significant portion of its government expenditure to tertiary education when 69.8 percent of its student population is in primary education. Mexico should focus their funds more on quality and equitable primary education to help increase its tertiary student enrollment in the future. The dramatic fall in student enrollment from primary education to secondary education shows that there is a retainment issue or lack of student engagement. Alexandra Zapata, director of education and civic innovation at the Mexican Institute for Competitiveness in Mexico City, responded to AMLO's education platform to increase government spending for higher education by saying that it was not a right approach because "the biggest bang for buck in education policy comes from investing in early

⁸⁰ The World Bank, Government expenditure on education, total (% of GDP). <https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS?locations=MX>

⁸¹ UNESCO, "Mexico: Education and Literacy," Accessed on April 7, 2019. <http://uis.unesco.org/country/MX>

⁸² Secretaria de Educacion Publica, "Sistema Educativo de los Estados Unidos Mexicanos Principales Cifras," (2017-2018), 14.

learning and primary education... what generates social mobility is investing in quality education at early age levels.”⁸³ A policy recommendation is suggested in the last chapter related to the importance of allocating these tertiary education expenditures to investments in a more relevant curriculum for basic education.

The federal and state governments in Mexico share educational responsibilities.⁸⁴ Because of this, federal and state institutions often contradict each other in their perspectives.⁸⁵ Mexico’s education system is often described as being corporative. There is a clear link of personal and group loyalties across and upwards in the system.⁸⁶ Educational considerations are often influenced by political and personal connections.⁸⁷ Many corrupt practices continue to exist in the Mexican education system, and reducing corruption will be another argument, discussed in the following chapter, for investing in quality education.

In 2015, Mexico spent 0.41 percent of GDP in private tertiary education and 0.26 percent of GDP in private primary education. Compared to Mexico, the United States spends 1.67 percent of GDP in private tertiary education and only 0.12 percent of GDP in private primary education.⁸⁸ Compared to The United States, Korea, Chile, Argentina, and Brazil, Mexico falls in the lowest position for both primary and secondary education

⁸³ Elliot Waldman, “After AMLO’s Education Overhaul, What’s Next for Mexico’s Troubled Public Schools,” *World Politics Review*. (January 14, 2019).

⁸⁴ OECD, “Strong Foundations for Quality and Equity in Mexican Schools,” (Paris: OECD Publishing, 2019), 25.

⁸⁵ Ibid.

⁸⁶ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 11.

⁸⁷ Ibid.

⁸⁸ OECD, “Private spending on education (indicator),” (2019). Accessed on March 12, 2019.

spending, but higher than Brazil for tertiary education spending.⁸⁹ Mexico's low educational position demonstrates that Mexico should prioritize primary and secondary education spending to have education quality lead to more enormous economic benefits.

The Mexican education system has a very diverse population, including ethnic, economic, social class, and geographic regions, and it needs to cater to their individual needs. For instance, Nuevo Leon and Coahuila are rich Mexican states with relatively high resources, while Chiapas, Guerrero, Nayarit, Oaxaca, and Tabasco have high numbers of ethnically diverse people and levels of poverty.⁹⁰ The middle consists of states such as Jalisco, Sinaloa, and Zacatecas which have a mostly middle-class and regions of poverty. Due to the extremely varied needs of the people in these states, educational administrations have a difficult time meeting their individual needs.⁹¹ First of all, CONAFE or the National Council for Educational Promotion was created to promote education in rural and urban disadvantaged areas in Mexico. AMLO's initiative to create a curriculum based on regional differences was also meant to address this issue. Mexico's diversity makes it difficult for specific actions and reforms to have an impact across all regions and schools in the country. In response to this, SEP introduced *Regiones Educativas* in 2015, which divided the country into five regions - Northwest, Northeast, West, Centre, and South-Southeast.⁹² SEP hopes to improve "regional management and enable greater interactions among states to support and monitor each other to encourage

⁸⁹ OECD, "Education spending (indicator)," (2019).

⁹⁰ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 11.

⁹¹ *Ibid.*, 11.

⁹² OECD, "Education Policy Outlook 2015: Making Reforms Happen," *OECD Publishing*. (2015), 18.

progress towards goals.”⁹³ Mexico’s government continues to find ways to improve and create a more equitable education system throughout the country.

Teacher quality in Mexico

Teacher education in Mexico consists of two university programs: teachers in basic education, which includes pre-primary, primary, and lower secondary schools, and teachers in upper secondary education.⁹⁴ *Escuelas normales* are usually the teacher colleges that most basic education teachers attend. However, teachers in Mexico have among the lowest proportion of teachers who have completed a teacher education or training programme (62%) from the countries participating in the Teaching and Learning International Survey (TALIS).⁹⁵ Also, 90 percent of teachers in Mexico have a university or higher education equivalent.⁹⁶

A major issue with the Mexican education system is the teacher training and education that often results in poor teacher quality. Student-teacher ratios in primary and secondary education are among the highest in Mexico compared with the other OECD countries. The OECD average for primary education is 15 students per teacher compared to 28 students per teacher in Mexico.⁹⁷ For secondary education, the OECD average is 13 students per teacher, but Mexico’s ratio is 30 students per teacher.⁹⁸ These ratios are significantly lower in private secondary schools: 19 students per teacher at the lower

⁹³ OECD, “Education Policy Outlook 2015: Making Reforms Happen,” *OECD Publishing*. (2015), 18.

⁹⁴ OECD, “Strong Foundations for Quality and Equity in Mexican Schools,” (Paris: OECD Publishing, 2019), 30.

⁹⁵ OECD, Mexico Results from TALIS 2013, (2013).

⁹⁶ *Ibid.*

⁹⁷ OECD, “Teaching and Learning International Survey (TALIS) 2013 Results: An international perspective on teaching and learning,” (2014).

⁹⁸ *Ibid.*

secondary level and 15 students per teacher at the upper secondary level.⁹⁹ As mentioned above, Mexican teachers often lack the necessary credentials for teaching. This further impacts educational equity throughout schools in Mexico because there exist schools with teachers that have the required credentials and preparation, while others that might not have teaching credentials. Teachers without required credentials mainly affect rural schools.

Teachers in Mexico have challenging and harsh working conditions. On top of the high teacher-student ratios in primary and secondary schools, teachers often have longer teaching hours.¹⁰⁰ Mexico spends a large portion of its education spending on teacher's salary and staff compensation rather than on school infrastructure or academic resources. Working time for teachers is divided into both teaching and non-teaching activities. The average teaching time for primary school teachers in Mexico is 800 compared to 782, the OECD average, lower secondary teaching time is 1047 compared to the OECD average 694, and upper secondary is 838 while 655 for OECD average.¹⁰¹ The non-teaching activities range from preparing lessons to general administrative work. The average non-teaching time for primary schools in Mexico is 0, while the OECD average is 418, the lower secondary non-teaching time is 120, and the OECD average is 418.¹⁰² Lastly, upper secondary non-teaching time is 133, while the OECD average is 487.¹⁰³ According to the OECD data, around 92 percent of the total budget for primary, secondary, and

⁹⁹ OECD, "Education at a Glance 2014: Mexico," (2014).

¹⁰⁰ OECD, "Strong Foundations for Quality and Equity in Mexican Schools," (Paris: OECD Publishing, 2019), 39.

¹⁰¹ OECD, "Teaching hours (indicator)," (2018).

¹⁰² OECD, "Education at a Glance 2014: Mexico," (2014).

¹⁰³ Ibid.

post-secondary non-tertiary education in Mexico goes towards staff compensation, with 83 percent of the budget spent on teachers' salaries.¹⁰⁴ These proportions are large compared to the OECD average of 79 percent of the total budget to staff compensation and 62 percent to teachers' salaries. Although teachers devote long hours to teaching, the quality of teachers and performance might not be the same for all teachers. Instead, the large portion of the budget allocated to teachers salaries might be better used elsewhere to improve the quality of education that many children are receiving across Mexico.

Educational attainment

High inequality in Mexico is a result of Mexico's low educational attainment. Mexico has the highest percentage of 25-64-year-olds who have below an upper secondary education (62.3%) compared with the OECD average (20.7%).¹⁰⁵ Mexico increased the compulsory school-leaving age or the mandatory age to stay in school, to 17 years in 2012 and made pre-primary education compulsory as a direct intervention to raise educational levels.¹⁰⁶ Mexico's uneducated workforce impacts their economic productivity compared to other countries with higher educational attainment levels. Similar incentives and initiatives are introduced in Mexico to increase educational attainment.

Regardless of the percentage of the federal budget going towards education, the academic achievement in Mexico is alarming. PISA stands for OECD's Programme for International Student Assessment which tests 15-year-old students from different

¹⁰⁴ OECD, "Education at a Glance 2014: Mexico," (2014).

¹⁰⁵ OECD. "Adult education level (indicator)." (2019).

¹⁰⁶ OECD, "Strong Foundations for Quality and Equity in Mexican Schools," (Paris: OECD Publishing, 2019), 32.

countries in reading, mathematics, and science. These tests attempt to determine mastery and preparation for the real world.¹⁰⁷ Mexico's student performance in science, math, and reading is substantially lower than the OECD average for all these subjects.¹⁰⁸ This data demonstrates that poor education quality in Mexico drives these lower test scores.

Some system-level policies such as grade repetition can hinder students educational attainment.¹⁰⁹ It can lead to increased student disengagement and early school leaving.¹¹⁰ According to PISA 2015, the grade repetition average in Mexico is 15.8% compared to the OECD average of 11.3%. Instead of having low achievers repeat grades, there should be additional support intervention to help children focus on mastering the skills necessary to be at their specific grade level competency.

Extreme achievement gaps exist between the rich and poor in Mexico. Even though Mexico is the wealthiest country in Latin America based on their GDP, they have the most significant enrollment gap between the richest and poorest quintiles of the 13- to 17- year-olds.¹¹¹ There is a 33 percent enrollment gap between the wealthiest families (90%) and the most impoverished families (57%). This gap is the same case for the difference in the average years of schooling; the wealthiest 20 percent have received an average of 6.9 more years of education than the most impoverished 20 percent among 21-

¹⁰⁷ OECD, "What is PISA?" (2018).

¹⁰⁸ OECD, "Mexico Student Performance PISA 2015," *Education GDP: The World of Education at your Fingertips*.

¹⁰⁹ OECD, "Education Policy Outlook: Mexico," (March 2018), 8.

¹¹⁰ *Ibid.*, 8.

¹¹¹ Mark Hanson, *Economic Development, Education and Transnational Corporations*. (London: Routledge, 2007), 82.

to 30-year-olds.¹¹² Evidently, the poor lack opportunities and access to resources that contribute to low school enrollment rates.

Programs have been introduced to help underprivileged communities in Mexico. Mexico's PROGRESA or Oportunidades (Programa de Educación, Salud, y Alimentación) is an antipoverty program that provided financial incentives for Mexican families for improving health and educational attainment. Although PROGRESA increased the number of children enrolled in school, it showed no improvements in student scores.¹¹³ The reality that learning quality has not improved makes us consider the importance of enhanced learning rather than increased schooling.

Another factor that influences the poor education quality in Mexico is the short school day at the primary level, which is only four hours per day.¹¹⁴ This short school day is mainly due to multi-shift schools that operate up to three shifts per day, which places constraints on the total time students can be in the school buildings.¹¹⁵ Teachers who work multiple shifts have less time to interact with students and parents and fully dedicate time to all their students.¹¹⁶ Less student to teacher interactions result in student disengagement because they are not provided with sufficient time to learn inside and outside the classroom.

¹¹² Mark Hanson, *Economic Development, Education and Transnational Corporations*. (London: Routledge, 2007), 82.

¹¹³ Ariel Fiszbein and Norbert Schady, "Conditional Cash Transfers," (Washington, D.C: The World Bank, 2009), 21.

¹¹⁴ Lucrecia Santibañez, Georges Vernez, and Paula Razquin, "Education in Mexico: Challenges and Opportunities," (Santa Monica, CA: RAND Corporation, 2005), 32.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

Mexican Evaluations and Assessments

The Secretariat of Public Education (SEP) and the National Institute for Education Evaluation (INEE) share the Mexican educational system evaluation responsibilities. The Mexican evaluation and assessment methods include student assessment, teacher appraisal, school evaluation, and system evaluation. These methods have many advantages and disadvantages. The first method is student assessment which provides for national standardized assessments or other assessments in the classroom. Some of the strengths of student assessments are that teachers are committed to learning, there is capacity for designing large-scale assessments, and attention has been placed to reduce grade repetition.¹¹⁷ The challenges of student assessments are that there is weak consistency of student assessments across schools, teachers have little freedom to their own teaching assessment, and the reliance on multiple-choice tests can be detrimental.¹¹⁸

The second method is teacher appraisal which includes examinations throughout a teacher's career. A permanent job for teachers requires them to take the National Examination of Teaching Knowledge and Skills.¹¹⁹ The strengths of having teacher appraisal are that there are various mechanisms for teacher appraisal and excellent performance, the National Teaching Post Competition "provides greater transparency to teacher recruitment," and there are informal practices already occurring in schools.¹²⁰

¹¹⁷ Paulo Santiago, et al., "OECD Educational Evaluation and Education: Mexico," (OECD Publishing, 2012).

¹¹⁸ Ibid.

¹¹⁹ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 69.

¹²⁰ Paulo Santiago, et al., "OECD Educational Evaluation and Education: Mexico," (OECD Publishing, 2012).

Some of the challenges of teacher appraisal include the issue that teacher quality is not the main focus of teacher appraisal, it does not offer the same opportunities for all teachers, and school leaders are not fundamental in teacher appraisal. Therefore, school leadership does not play an important role.¹²¹ Data from the Teaching and Learning International Survey (TALIS) shows that teachers in Mexico report positive views about how receiving feedback on their teaching after their students' test scores (81%) and classroom observations (82%) has helped them with their teaching development.¹²²

The third method is school evaluation. It is an unestablished approach that is voluntary except when a school participates in a federal education program.¹²³ The benefits of school evaluation are that it is supported at the federal level, there is a good focus on training school leadership to improve self-evaluation, and human resources can evaluate schools and promote improvement through these school evaluations.¹²⁴ However, school evaluations also provide some challenges; for example, schools have limited control over what they can do, there is not a comprehensive system of school evaluations, and there is also not enough accountability from states to follow through about the quality of education in these schools.¹²⁵

Lastly, education system evaluation is the fourth method of assessment in Mexico's education system. The Secretariat of Public Education becomes in charge of the

¹²¹ Paulo Santiago, et al., "OECD Educational Evaluation and Education: Mexico," (OECD Publishing, 2012).

¹²² OECD, Mexico Results from TALIS 2013. (2013)

¹²³ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 70.

¹²⁴ Paulo Santiago, et al., "OECD Educational Evaluation and Education: Mexico," (OECD Publishing, 2012).

¹²⁵ Ibid.

the education systems' evaluations with tools to evaluate its performance.¹²⁶ The strengths of a system evaluation are that policy objective, and indicators allow for monitoring the progress for system evaluation, there is the support from a national institute dedicated to education system evaluation, and lastly, there are vast resources on national statistics for Mexico's education system. Although system evaluations function well in Mexico, there are many data gaps, the programme evaluation is insufficient, and there is a lack of internal accountability of states.¹²⁷

Innovative learning approaches to reach more students

Mexico introduced new innovative learning approaches as an attempt to reach a larger student population, especially in rural areas. An example of this was the founding of the telesecundaria in 1968. This increased access to secondary education especially for rural learners. In 2010, about 20% of student enrollment in secondary education was through a Telesecundaria programme.¹²⁸ However, these distance programmes need to be well-funded because data demonstrates that students in the Telesecundaria programme perform worse than students in other schools while controlling for socioeconomic status.

¹²⁹

Mexico's Modernization Through Education

Ernesto Zedillo Ponce de León, president of Mexico from 1994-2000 and Minister of Education, wanted people to sign the Acuerdo Nacional para la

¹²⁶ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 70.

¹²⁷ Paulo Santiago, et al., "OECD Educational Evaluation and Education: Mexico," (OECD Publishing, 2012).

¹²⁸ UNESCO, "Youth and Skills: Putting Education to Work," *EFA Global Monitoring Report*, (2012), 251.

¹²⁹ Ibid.

Modernización de la Educación Básica y Normal.¹³⁰ This modernization agreement was meant to modernize the Mexican business community and the transfer of central government control of basic education and teacher training to the states. The Fondo para la Educación Superior (FOMES) and the Programa para el Mejoramiento del Profesorado (PROMEP) were attempts to improve Mexican universities to be at the level of top world universities.¹³¹ Regardless of these attempts to modernize the Mexican education system, public spending on education has increased without effective allocations.

Educational Equity in Mexico

Mexico has attempted to create a more equitable and inclusive education system through various reforms and initiatives. For example, Peña Nieto's reform in 2013 made "quality education a right for all Mexicans."¹³² There have been multiple initiatives since then. The Programme for Inclusion and Educational Equity implemented in 2014 intends to provide additional support for indigenous and special needs students, which guarantees inclusion and equitable access to disadvantaged students.¹³³ The Mexican system still does not provide equal opportunities across the entire country. Mexico's education system also lacks in social inclusiveness. Mexico is ranked last for social inclusion with an average of 60.3 compared to the OECD average of 76.5.¹³⁴ Social inclusion indicators

¹³⁰ David C. Scott, Chris M. Posner, and Elsa Guzman, *The Education System in Mexico*, (London: UCL Press, 2018), 41.

¹³¹ *Ibid.*, 42.

¹³² OECD, "Strong Foundations for Quality and Equity in Mexican Schools," (Paris: OECD Publishing, 2019), 35.

¹³³ Consejo Nacional para el Desarrollo y la Inclusión de las Personas con Discapacidad. "¿Qué es el Programa para la Inclusión y la Equidad Educativa?" *gob.mx*. (January 25, 2017).

¹³⁴ OECD, "Education Policy Outlook: Mexico," (March 2018).

explain why students in the Mexican education system are more likely to attend school with students with similar socioeconomic backgrounds.¹³⁵ School differences account for variations in students' performance. The results from *Plan Nacional para la Evaluación de los Aprendizajes* (PLANEA) in 2017 show that students scores in both math and Spanish language were significantly higher for urban students compared to rural students.¹³⁶ It also put into perspective the regional disparities in Mexico's education system. For example, the average score for the lowest scoring state was Tabasco with 457 points compared to the average score for the highest scoring which was Colima with 522 points.¹³⁷ There is a 65 point difference that can be explained by the inequity in quality education from regional differences in Mexico.

The New Educational Model (Nuevo Modelo Educativo) was introduced in 2017 to restructure the education system and as an attempt "to provide quality education with equity and prepare all students for the 21st century."¹³⁸ There are fundamental learning components from this new model that include content and activities that contribute to the intellectual, personal, and social growth of students. It also gives more autonomy for schools to have a say in their curriculum. In 2017, the Key Learnings for Integral Education was a curricular reform that addressed the learning needs for the 21st century and "to adapt to Mexico's socio-economic and cultural context."¹³⁹

¹³⁵ OECD, "Education Policy Outlook: Mexico," (March 2018).

¹³⁶ INEE, "PLANEA Resultados nacionales 2017," (2018).

¹³⁷ Ibid.

¹³⁸ OECD, "Strong Foundations for Quality and Equity in Mexican Schools," (Paris: OECD Publishing, 2019), 36.

¹³⁹ OECD, "Strong Foundations for Quality and Equity in Mexican Schools," (Paris: OECD Publishing, 2019), 36.

The differences in the learning environment between public and private institutions also prevent equitable learning opportunities in Mexico. As mentioned earlier, the teacher-student ratio is lower in private schools. The additional attention that Mexican students receive at private schools can bring long term effects in their learning and educational outcomes.

Mexico also fails to provide equal opportunities to higher education because poor students, due to their socioeconomic and cultural backgrounds, have disadvantages even in completing higher education. For example, there is a lack of financial support with no federal student loan program and very few scholarships available that only benefit about 20% of students.¹⁴⁰ The next chapter will discuss more in depth the lack of higher education opportunities in Mexico.

The rest of this thesis will argue the importance of a reliable education system for a developing country like Mexico. Arturo Fernandez, Director of BBVA Bancomer, discussed how Mexico “cannot attain the status of a developed country unless its citizens have access to proper education, because ignorance leads only to intolerance and violence.”¹⁴¹ Education has been a significant focus to transform and modernize Mexico for many years. Mexico has accomplished their educational goal of providing universal education for all children; yet, they are now moving towards pursuing education quality.

¹⁴⁰ OECD, “Higher Education in Mexico: Labour Market Relevance and Outcomes,” *Higher Education*. (Paris: OECD Publishing, 2019), 97.

¹⁴¹ Noemi Castro Fernandez. “Education: The Major Driver of Transformation for Mexico.” *NEWS BBVA* (blog), (June 7, 2016).

¹⁴² Due to this new goal, there have been many education reforms in an attempt to improve the quality of education in Mexico.

¹⁴² Noemi Castro Fernandez. "Education: The Major Driver of Transformation for Mexico." *NEWS BBVA* (blog), (June 7, 2016).

Chapter III Mexico's Economic Underperformance

This chapter will discuss how improving the quality of education in Mexico is fundamental for Mexico's economy to maintain international competitiveness and continue growing. It aims to understand Mexico's economic underperformance as it relates to educational quality and opportunities. The topics discussed will include how increased education levels can contribute to Mexico's high violence levels, how higher education opportunities and incentives can promote economic growth, which will further benefit Mexican businesses and their competitiveness.

Mexico's economic structure is described as employment with long hours, low salaries, and poor employment conditions, which does not retain or attract talent, and therefore, impedes economic development.¹⁴³ Thus, informal employment is often an alternative for students who leave school, which "can be a deterrent to further skills development in the formal education system."¹⁴⁴ New technologies are changing the demand for higher-level skills that are hard to automate, such as social and emotional skills, creativity, high-level cognitive capabilities, which Mexican students need to start acquiring to adapt to the new employment demands.¹⁴⁵

Higher education opportunities

Higher education can provide many economic benefits to a country. Studies have shown that an educated workforce, "increases productivity along with individuals' ability

¹⁴³ OECD, "Higher Education in Mexico: Labour Market Relevance and Outcomes," *Higher Education*. (Paris: OECD Publishing, 2019), 79.

¹⁴⁴ *Ibid.*

¹⁴⁵ *Ibid.*

to sustain employment and earn a higher income. Subsequently, the nation sees a return in the form of a higher tax base and a rise in demand for goods and services. In addition, so the argument goes, an educated workforce with a lower unemployment rate diminishes the demand for government-provided social services.”¹⁴⁶ A higher education degree in Mexico results in many more job opportunities and higher income potential. In Mexico, 17.4% of 25 to 64-year-olds have a tertiary education.¹⁴⁷ People in Mexico with a higher education degree earn a wage premium of 102% compared to the OECD average of 56%.¹⁴⁸ As mentioned in the previous chapter, the percentage of Mexican adults with upper secondary and tertiary education is entirely below the OECD average, which explains for the low-skilled workforce in Mexico.¹⁴⁹ Although higher education might entail higher income potential, the low percentage of Mexican people with tertiary education demonstrates that higher education in Mexico has opportunity gaps.

Social mobility is defined as whether a country provides equal opportunities for moving up the social ladder regardless of their upbringing and background.¹⁵⁰ Results show that there is better mobility among the middle-income quintiles, but higher immobility in the extreme levels of the income distribution.¹⁵¹ Different factors should be considered regarding social mobility, but equal opportunities to receive an education is

¹⁴⁶ Sarah Krichels, “The benefits of Higher Education: A 50-State Analysis,” *International Higher Education*, (2015).

¹⁴⁷ OECD, Adult education level (indicator), (2019).

¹⁴⁸ OECD, “Strong Foundations for Quality and Equity in Mexican Schools,” (Paris: OECD Publishing, 2019), 33.

¹⁴⁹ Ibid.

¹⁵⁰ International Finance Corporation, “Affordable Higher Education: Implications for Career Advancement and Social Mobility,” *The Work Bank Group*, (April 2015).

¹⁵¹ Roberto Velez Grajales, et al., “Informe de Movilidad Social en Mexico,” *Centro de Estudios Espinosa Yglesias*, (2012), 18.

one of the most important. If affordability and access is taken into consideration, higher education can serve as a way of promoting social mobility in Mexico. The lack of affordability in higher education is necessary to increase access to tertiary education in Mexico. An example of a successful financial aid support program for increasing higher education students was the National Scholarship Program for Higher Education (PRONABES) introduced in 2001. This program provided scholarships towards higher education for those students with demonstrated financial need, which increased the number of indigenous students in tertiary education from 5.2% in 2004-05 to 12.6% in 2010-11.¹⁵² The program also contributed to a 32.24% increase of tertiary education graduates in Mexico from 359,635 in 2005 to 475,584 in 2011 due to financial support.¹⁵³ Affordability in Mexico's higher education system is crucial to increase the number of people pursuing tertiary education, which can contribute to improved competitiveness "by improving labor force productivity and shifting Mexico towards a knowledge-based economy."¹⁵⁴

Knowledge-based economy

The developing regions of Mexico and small and medium-sized enterprises (SMEs) should put knowledge to see economic benefits.¹⁵⁵ Mexico falls behind in the quality of the competitive environment for firms and innovation compared with its main

¹⁵² World Bank, "Mexico Increases Access to Tertiary Education," (July 4, 2013).
<http://www.worldbank.org/en/results/2013/07/04/mexico-increases-access-to-tertiary-education>.

¹⁵³ Ibid.

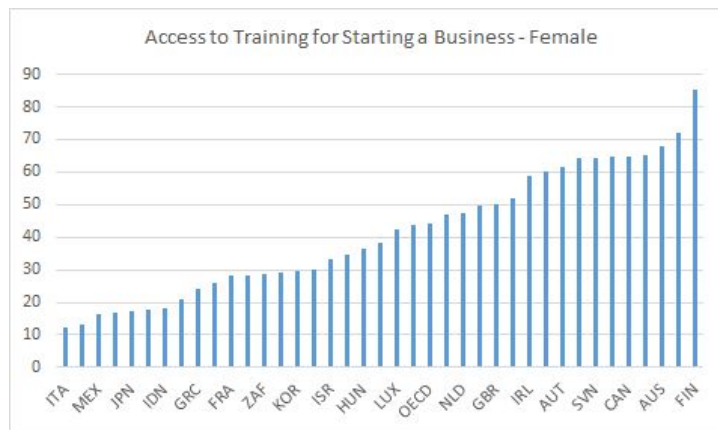
¹⁵⁴ Ibid.

¹⁵⁵ Yevgeny Kuznetsov and Carl J. Dahlman., "Mexico's Transition to a Knowledge-Based Economy," (Washington D.C: The World Bank, 2008), 3.

trading partners and competitors.¹⁵⁶ When analyzing Mexico’s innovation case, Mexico’s knowledge economy has not leveraged knowledge for income and job creation.¹⁵⁷ The figure below from the OECD shows that Mexico ranks lowest in access to training on how to start a business for males, and it ranks third to last for females. This low ranking demonstrates how Mexico does not provide the necessary tools for its citizen to start their own businesses and contribute to the economy’s productivity.



Source: OECD Data, *Starting a Business*



¹⁵⁶ Yevgeny Kuznetsov and Carl J. Dahlman., “Mexico’s Transition to a Knowledge-Based Economy,” (Washington D.C: The World Bank, 2008), 21.

¹⁵⁷ Ibid.

Even the most basic products now require large amounts of knowledge in skills such as design, software, and other services.¹⁵⁸ Today's economy has made education, and skills enhancement important for business, and a culture of lifelong learning to keep up to date with new technologies and products has become an essential investment for businesses and politicians to consider.¹⁵⁹ A knowledge-based economy also runs the risk of widening the wage gap between skilled and unskilled workers in Mexico because the knowledge economy will further decrease the earnings of the unskilled population.¹⁶⁰ For this to happen, Mexico needs to effectively allocate education expenditures across all levels of education. An equal education expenditure distribution is crucial since new knowledge is often related to higher level teaching and research, and thus university research takes a large portion of domestic R&D.¹⁶¹ Mexico's economy is behind on innovation, with 0.52% of GDP investment on government research and development (R&D) compared to the OECD average (2.36%).¹⁶² Furthermore, small and medium enterprises (SMEs) in Mexico export less than 10% of their products and services, and Mexico has the lowest innovation outputs from the OECD countries with less than 300 international patents and 15,000 scientific publications in 2016.¹⁶³ "Higher education plays a fundamental role in this through the development of skills and the production and translation of knowledge for innovation."¹⁶⁴

¹⁵⁸ Yevgeny Kuznetsov and Carl J. Dahlman., "Mexico's Transition to a Knowledge-Based Economy," (Washington D.C: The World Bank, 2008), 10.

¹⁵⁹ Ibid., 10-11.

¹⁶⁰ Ibid., 19.

¹⁶¹ Ibid., 24.

¹⁶² OECD, "Higher Education in Mexico: Labour Market Relevance and Outcomes," *Higher Education*. (Paris: OECD Publishing, 2019), 69.

¹⁶³ Ibid., 67.

¹⁶⁴ Ibid., 72.

Mexico's government should focus on supporting higher education institutions to raise productivity and innovation in Mexico's traditional industries, which include food, tourism, and retail, they need to involve researchers and specialized professionals with different disciplines in higher education degrees.¹⁶⁵ A high-tech entrepreneurship environment would require Mexico, "to provide students with entrepreneurial skills so that they can create and grow their start-ups and eventually employ others."¹⁶⁶ These skills can provide future entrepreneurs with the necessary skills and training to start their own business and provide economic growth for Mexico by contributing to its productivity. This entrepreneurial education success is seen with Guadalajara's, the capital of Jalisco, government large investment in The University of Guadalajara. This public, higher education system is one of the most renowned academic institutions in the country. In fact, due to the importance of investing in higher education to produce competitive candidates for Mexican or foreign firms to compete internationally, the university has developed "a more competitive educational offer in high-tech academic areas internally, and a more tech-savvy environment in the state through the sponsoring of several global-scale events."¹⁶⁷ This investment has resulted in Guadalajara turning into the heart of the Mexican Silicon Valley with over 300 startups since 2014 and 600 top international firms, including Intel, Oracle, HP, IBM, and Dell.¹⁶⁸ The flow of these new

¹⁶⁵ OECD, "Higher Education in Mexico: Labour Market Relevance and Outcomes," *Higher Education*. (Paris: OECD Publishing, 2019), 79.

¹⁶⁶ *Ibid.*

¹⁶⁷ Victor Manuel Hernandez-Rodriguez, "Why not Mexico? Policy Recommendations for a Globally-Oriented Economic Strategy," *CMC Senior Theses*, (2018), 104.

¹⁶⁸ Adam Popescu, "Is Mexico the next Silicon Valley? Tech boom takes root in Guadalajara," *The Washington Post*, (May 14, 2016).

startups and foreign firms in Guadalajara have promoted economic productivity and, as a result, wages have risen in the formal sector.

Increased funding in tertiary education in Mexico results in underfunding primary and secondary education as mentioned in chapter II. Access to higher education continues inequitable because of the entry requirements and tuition fees.¹⁶⁹ Low-income areas are more likely to have lower quality upper secondary schools that do not foster the necessary skills for these students to get accepted to prestigious higher education institutions. The less prestigious higher education institutions are often private which are more costly than public higher education, and these students are more likely to drop out due to financial or academic reasons; if they do graduate from these less prestigious schools, they will enter the labor force with lower skills.¹⁷⁰

Although there have been increased levels of students pursuing higher education in Mexico, there has been a lack of employment opportunities that can discourage students from seeking advanced education.¹⁷¹ According to OECD data, young higher education graduates in Mexico (80.7%) have lower employment rates than the OECD average of 84.1%. Also, the percentage of higher education graduates that are not in the labor market is around 14.5% compared to the OECD average of 10.7%.¹⁷² Hence, even though higher education might represent higher income potential, the lack of employment opportunities in Mexico for graduates might discourage others from pursuing higher

¹⁶⁹ OECD, “Higher Education in Mexico: Labour Market Relevance and Outcomes,” *Higher Education*. (Paris: OECD Publishing, 2019), 115.

¹⁷⁰ *Ibid.*

¹⁷¹ *Ibid.*, 3.

¹⁷² *Ibid.*, 31.

education. A lack of employment opportunities can be one possible reason for the low levels of tertiary education attainment in Mexico.

There is also a misalignment between graduates' skills and labor market needs in Mexico. For instance, industries such as mining and extraction, construction, communication, transport, and services sectors often have difficulties filling their demand for workers, and this is related to a lack of skills.¹⁷³ It is suggested that the issue is a "lack of connection between the knowledge and skills developed in higher education programmes and their labour needs."¹⁷⁴ This disconnect can explain the high levels of unemployment among higher education graduates.

Violence, Education, and Economic Growth

Violence is costly for Mexico. In 2018, violence cost Mexico 268 billion dollars, accounting for 24% of the country's GDP according to the Institute for Economics and Peace in the *Mexico Peace Index report 2019 (MPI)*.¹⁷⁵ Homicides make up about 51% of the economic impact. The MPI mentioned how violence reduces productivity and affects the price of goods and services:

While violent incidents incur costs in the form of property damage, physical injury or psychological trauma, fear of violence alters economic behavior. It does this primarily by changing investment and consumption patterns as well as diverting public and private resources away from productive activities and towards protective measure.¹⁷⁶

¹⁷³ OECD, "Higher Education in Mexico: Labour Market Relevance and Outcomes," *Higher Education*. (Paris: OECD Publishing, 2019), 33

¹⁷⁴ Ibid.

¹⁷⁵ Mexico News Daily, "Cost of violence rose 10% last year to 5 trillion pesos: Mexico Peace Index," (blog), (April 10, 2019). <https://mexiconewsdaily.com/news/violence-cost-5-trillion-pesos-last-year/>

¹⁷⁶ Ibid.

Mexico needs to focus on reducing violence if they want a more stable country and “improvement in economic opportunities.”¹⁷⁷ Reducing violence can decrease the economic toll that it has on the country. This thesis will pose arguments about how violence affects educational attainments, but also how increasing levels of education can prevent those who would otherwise participate in crimes and encourage them to work in the formal markets. Most arguments for addressing the reduction of violence in Mexico include “strengthening judicial procedures, fighting corruption, reforming the police forces, and a further improvement in economic opportunities.”¹⁷⁸

The effects of increased violence on educational outcomes in Mexico is relevant in multiple studies. The Program on Poverty and Governance has conducted research to measure violence’s impact on human capital, specifically through education. Mexico is experiencing high levels of violence. A study examined the effect of students’ exposure to crime on educational outcomes in Mexico, and it found that “an increase of one unit in the number of homicides per 10,000 inhabitants reduces standardised test scores in Spanish and Mathematics by 0.0035 and 0.0039 standard deviations.”¹⁷⁹ Also, an increase in the homicide rate per 10,000 inhabitants increases the grade failure rate by 0.028 percentage points for primary schools and 0.027 for secondary schools. These short-term effects of violence on test scores imply an impact on future educational attainment levels and the future income potential of Mexican youth.¹⁸⁰

¹⁷⁷ Eugenio W. Vargas and Joel Martinez, “Improving Mexico’s Economic Competitiveness Through Security Cooperation,” *Center for American Progress*. (2017)

¹⁷⁸ Ibid.

¹⁷⁹ Pedro P. Romano Orraca, “Crime Exposure and Educational Outcomes in Mexico,” *Working Paper Series 7715, Department of Economics, University of Sussex Business School*. (2015).

¹⁸⁰ Ibid.

The growing importance of education has increased its vulnerability to corruption. Education scarcity, such as shortage of student spots in schools, might result in people engaging in corrupt practices to obtain specific education placements.¹⁸¹ Mexico's new president, AMLO, wrote in his book *A New Hope for Mexico* how "A politics of austerity would allow us -- once corruption has been addressed -- to invest in the development and the well-being of our people."¹⁸² He argues that "Corruption is the driver of inequality and suffering in our nation. Nothing has harmed Mexico as much as corruption."¹⁸³ When many corrupt practices add up, they take a toll on the economy, according to AMLO. A possible way to address corruption is by increasing the quality of education. There seems to be a link between more educated countries and better governments.¹⁸⁴ A possible reason for this is that educated people might be better at complaining since they are "more literate, more articulate, and more knowledgeable about where to go and how to complain."¹⁸⁵ Providing civic courses can promote the importance of voting, which would create a more involved government.¹⁸⁶ Therefore, developing countries should prioritize education as a way of combating corruption and improving their government, resulting in further economic development.

A study finds that improving education can bring social benefits and can be a "key policy tool in the drive to reduce crime."¹⁸⁷ It found that a 1% reduction in the

¹⁸¹ OECD, *Integrity of Education: A Methodology for Sector Assessment*, (2018).

¹⁸² López Obrador, Andrés Manuel, *A New Hope for Mexico : Saying No to Corruption, Violence, and Trump's Wall*, Translated by Natascha Uhlmann. (London: OR Books, 2018), 108.

¹⁸³ *Ibid.*, 95.

¹⁸⁴ Stephen Lurie, "Highly Educated Countries Have Better Governments," *The Atlantic*, (March 4, 2014).

¹⁸⁵ *Ibid.*

¹⁸⁶ *Ibid.*

¹⁸⁷ Stephen Machin, Oliver Marie, and Suncica Vujic, "The Crime Reducing Effect of Education," *The Economic Journal*, vol. 121, (2011).

population without any education resulted in a 0.851 to 0.999% fall in property crime convictions.¹⁸⁸ Greater social benefits come from increasing education expenditures than having crime expenses from potentially uneducated individuals. Thus, investment in education can be effective mechanism for reducing crime in Mexico. Three possible explanations might explain why education affects criminal participation: income effects, time availability, and patience, or risk aversion.¹⁸⁹ First off, the income effect explanation refers to the fact that education increases the returns to legitimate work and it also raises the opportunity costs of illegal behavior.¹⁹⁰ Second, the time spent in school is important because it limits the time available for participating in criminal activity for teenagers.¹⁹¹ Lastly, patience and risk aversion can be a major determinant of whether individuals will prefer high-income potential from illegal activities rather than valuing their future earnings from receiving an education.¹⁹² Furthermore, “education may increase risk aversion that, in turn, increases the weight given by individuals to a possible punishment and consequently reduces the likelihood of committing crimes.”¹⁹³ In conclusion, we can argue that investments in education can help with decreasing crime in Mexico, and therefore, the cost of violence can be reduced for the country.

Mexican businesses and companies

¹⁸⁸ Stephen Machin, Oliver Marie, and Suncica Vujic, “The Crime Reducing Effect of Education,” *The Economic Journal*, vol. 121, (2011).

¹⁸⁹ Ibid.

¹⁹⁰ Lance Lochner, “Education, Work, and Crime: A Human Capital Approach,” *International Economic Review*, (2004).

¹⁹¹ Stephen Machin, Oliver Marie, and Suncica Vujic, “The Crime Reducing Effect of Education,” *The Economic Journal*, (2011).

¹⁹² Lance Lochner and Enrico Moretti, “The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports,” *American Economic Review*, (2004).

¹⁹³ Stephen Machin, Oliver Marie, and Suncica Vujic, “The Crime Reducing Effect of Education,” *The Economic Journal*, (2011).

The quality of education can hinder more than just the individual experiences of people across the world. The competitiveness of companies can be significantly affected if a country's education system is not producing adequate skills and competencies.¹⁹⁴ The modern economy has seen the increasing importance of education and skill development for business success.¹⁹⁵ Skilled workers are scarce due to low achievement and educational levels. Based on the Programme for International Student Assessment (PISA) students in Mexico have scored poorly in math with 56.6 percent, in reading with 41.7 percent, and science with 47.8%.¹⁹⁶ Additionally, completion of upper secondary education for 15-19-year-olds is 56%% compared to the OECD average of 84%.¹⁹⁷ It is necessary for Mexico to improve the quality of education and promote equitable skills so that Mexican youth can benefit from years of schooling. Developing high quality and relevant skills is also crucial for Mexico's economic productivity and "building a more equitable, and cohesive society."¹⁹⁸

In recent years, Mexico has focused on developing a skilled workforce to compete internationally. There have been initiatives in education, including preparatory college coursework, trade schools, and subsidized training seminars.¹⁹⁹ Their goal is to develop

¹⁹⁴Comisión Económica para América Latina y el Caribe. "Una mejor educación y el desarrollo de competencias son clave para impulsar el crecimiento inclusivo." *Comunicado de Prensa CEPAL*. Text, (December 9, 2014).

¹⁹⁵ Yevgeny Kuznetsov and Carl J. Dahlman., "Mexico's Transition to a Knowledge-Based Economy," (Washington D.C: The World Bank, 2008), 10.

¹⁹⁶ OECD, "OECD Skills Strategy Diagnostic Report Executive Summary Mexico," (2017), 5.

¹⁹⁷ Ibid.

¹⁹⁸ OECD, "OECD Skills Strategy Diagnostic Report Executive Summary Mexico," (2017), 2.

¹⁹⁹ NAPS, "Mexico's Labor Force: 2018 Growth & Statistics," *NAPS*. (December 10, 2018).

the technical skills of Mexico's next generation of workers.²⁰⁰ Technical skills plays an important role in Mexico's future economic prosperity.

Mexico is ineffective in providing information about the skills required for various learning and education pathways. In some countries, there have been representatives of businesses, trade unions, and training institutions to "develop national standards defining the skills and knowledge required for a range of jobs."²⁰¹ It is difficult, however, to accurately implement national qualification frameworks because countries have often set low standards which might result in diminishing value in the labor market. For example, frameworks in the United Kingdom have set low standards for low achieving students, which lowers their qualifications and skills for the labor market, and ultimately impacts their future career progression.²⁰²

Emigration to the United States affects Mexico's supply of skilled labor because many educated professionals are pursuing their careers in the United States rather than staying in the United States.²⁰³ There is evidence that suggests that the option of migration to the United States serves as "a disincentive to secondary school attendance and completion."²⁰⁴ Therefore, the possibility that people can immigrate to the United States and earn better wages can discourage youth from continuing their education in Mexico especially if they do not see the value of an investment. This increase in

²⁰⁰ NAPS, "Mexico's Labor Force: 2018 Growth & Statistics," *NAPS*. (December 10, 2018).

²⁰¹ UNESCO, "Youth and Skills: Putting Education to Work," *EFA Global Monitoring Report*, (2012), 252.

²⁰² *Ibid.*

²⁰³ Gordon H. Hanson, "Understanding Mexico's Economic Underperformance," *Migration Policy Institute*, (2012), 9.

²⁰⁴ *Ibid.*

Mexico's skilled workers stems from Mexico's economic crisis.²⁰⁵ According to the Deputy Secretary of Higher Education in 2009, Rodolfo Tuiran, the exodus of the Mexican talent cost the country more than 100 billion pesos.²⁰⁶ When this occurs, Mexico loses its investment in education because they do not utilize their knowledge and skills in the Mexican economy. Due to this, Mexico should incentivize those with a higher education degree with opportunities inside the country so that they can contribute to Mexico's economy.

²⁰⁵ Michael Clemens, "Skilled Migration from Mexico: Trends, Concerns, and Outlook," *Center for Global Development*, (2014). <https://www.cgdev.org/sites/default/files/skilled-migration-mexico.pdf>

²⁰⁶ Ibid.

Chapter IV: Conclusions and Educational Policy Recommendations

The previous chapters have aimed to provide a contextual background of Mexico's education system and examine how certain aspects have affected Mexico's economic development. It is evident how raising the quality of education can promote economic growth in Mexico by creating a more skilled workforce that can increase Mexican businesses' productivity. Based on the findings on Mexico's education system and its economic underperformance, this thesis presents three educational policy recommendations that Mexico's government should consider for future economic prosperity through improvements in its education system. The three main recommendations include introducing new teacher preparation programs and evaluations, creating a new relevant curriculum, and providing internship and vocational opportunities, specifically for higher education students.

Overall, Mexico's levels of educational attainment have increased over the years, yet there is still an achievement gap due to poor quality education and lack of opportunities to utilize and expand the skills acquired in school. First off, a majority of the Mexican population does not attend higher education because the basic education system lacks funding and resources to provide the best education that can prepare students for tertiary education. Moreover, even if students do attain higher education, they often graduate without the skills in demand for the job market.²⁰⁷ As mentioned in chapter III, Mexico needs to realign the skills taught in higher education programmes

²⁰⁷ OECD, "Higher Education in Mexico: Labour Market Relevance and Outcomes," *Higher Education*. (Paris: OECD Publishing, 2019), 33

with labor needs. However, it should also focus on providing equitable education in the basic education levels to develop foundational skills that can help Mexican students reach higher education and thrive there. The academic curriculum in primary and secondary schools should be more relevant, the teacher recruitment and preparation strategies should be changed to effectively teach tangible and relevant skills, and internship and vocational opportunities should be expanded across Mexico.

Recommendation #1: Teacher preparation and evaluations

In addressing poor teacher quality in Mexico, teacher recruitment strategies should be modified to prepare all teachers for high-quality teaching. Results from PISA, an international student assessment, capture Mexico's ineffectiveness in providing an adequate education. The difference between schooling and learning is relevant because, although universal primary education has been achieved, there is a discrepancy between the actual learning and skill development Mexican students are receiving and their level in school. The origin of this issue stems from teacher's education and preparation to teach students in essential skills successfully.

The fact that only about 62% of teachers in Mexico hold a teacher education or training program indicates that many teachers are not well-prepared to teach effectively.

²⁰⁸ Therefore, prioritization for pre-service training programs is beneficial because “pre-service training programs focused on the work teachers will actually face in classrooms lead to more effective first-year teachers and higher learning for their

²⁰⁸ OECD, Mexico Results from TALIS 2013.

students.”²⁰⁹ The compulsory pre-service teaching practice average is around 140 weeks in Cuba compared to 40 in Mexico.²¹⁰ The length of pre-service teaching practice might be one factor that explains Cuba’s high-quality education and attainment levels. Hence, Mexico should increase the levels of teacher training before they start teaching because this investment can bring long-term benefits to educational attainment in Mexico.

Along with this, the Mexican Secretariat of Public Education (SEP) should adopt more strict national teacher standards that will assure placement of qualified teachers at schools. AMLO promised to repeal Pena Nieto’s reforms, including the controversial teacher evaluations, yet an improved teacher evaluation system still needs to be implemented for improving teachers’ quality and maintaining their accountability.²¹¹ Arlin Martinez, a current primary teacher and a recent graduate from the Escuela Normal in Queretaro, one of the top teaching institutions in Mexico, shared her opinion on Pena Nieto’s 2013 reforms. She mentioned, “It was more than an education reform. It was a labor reform. The evaluations were not about the classroom context or a teacher’s performance.”²¹² Martinez clarifies that the evaluations themselves did not upset teachers, but that it was more about how the evaluations were not beneficial to the quality of education.²¹³ As a result, to improve teacher quality in Mexican schools, there should be both an increase in the length of pre-service training programs and teacher evaluations

²⁰⁹ Donald Boyd, et al., “Who Leaves? Teacher Attrition and Student Achievement.” Working Paper 14022, (National Cambridge, MA: National Bureau of Economic Research, 2008).

²¹⁰ Barbara Bruns and Javier Luque, “Great Teachers: How to Raise Student Learning in Latin America and the Caribbean,” *World Bank Group*, (2015), 28.

²¹¹ Ibid.

²¹² Arlin Martinez, Interview by Betzy Perez. Phone, April 13.

²¹³ Ibid.

that assess a teacher's performance, while also creating an effective system of feedback for teacher development and growth.

Recommendation #2: Development of a relevant curriculum

Basic education should be a major focus for Mexico. First off, Mexico's large allocation of government expenditure to tertiary education should be slightly reduced and reallocated to primary and secondary education instead. Even though it is crucial to invest in higher education, funding should be distributed in areas that will have a direct impact on student's education at an early point. Why invest so much in higher education if there are not enough students reaching tertiary education? Instead, Mexico's government should focus on investing in high-quality education at the primary level to increase the pipeline of students prepared for higher education. One possible approach can be integrating a more appealing, relevant curriculum at both the primary, secondary, and tertiary levels to increase student engagement, as well as producing relevant skills and knowledge to the labor force. This new curriculum will not only benefit students but the overall Mexican economy as well.

Education in Mexico seems to resemble the "banking" concept of education which Paulo Freire defined as, "an act of depositing, in which the students are the depositories, and the teacher is the depositor. Instead of communicating, the teacher issues communiques and makes deposits which the students patiently receive, memorize, and repeat."²¹⁴ Education should not be merely an act of a teacher depositing information to students because it can be ineffective in engaging students and increasing knowledge. It should not be based only on memorization, but instead, students should be able to feel connected with the learning material. Mexico's curriculum in both basic education, upper

²¹⁴ Paulo Freire, "Pedagogy of the Oppressed," (1970), 72.

secondary education, and higher education should be more relevant and applicable to the real world. A new relevant curriculum may reduce the high levels of student disengagement that exist among all levels of education in Mexico, which will enhance students' skills and competency in the labor force, and thus promote economic development.

About 90 percent of public education expenditure in Mexico goes towards staff compensation.²¹⁵ This leaves 10% for school infrastructure, technology, and other school resources. Therefore, Mexico should restructure its public education expenditures and invest in the development of an appealing, relevant curriculum for students to find value in school. Implementing entrepreneurship education starting in primary education might be beneficial in promoting entrepreneurial practices among children. A study to determine the effectiveness of an entrepreneurship education sub-programme in Mexican primary schools found that it:

“allowed the participating children to acquire knowledge that reaffirmed or created values and skills inherent to young people who have developed an entrepreneurial spirit... also resulted in important social development: personal achievement, economic independence, a willingness to take risks, the ability to learn while thinking and doing, and an awareness of the importance of creating self-employment.”²¹⁶

Therefore, the skills acquired through entrepreneurship education can teach significant social development and entrepreneurial skills that no other curriculum could provide. A modification to the public education curriculum in primary schools can develop valuable

²¹⁵ Gordon H. Hanson, “Understanding Mexico’s Economic Underperformance,” *Migration Policy Institute*, (2012), 9.

²¹⁶ Carcamo-Solis, M. et al., “Developing entrepreneurship in primary schools. The Mexican experience of “My first enterprise: Entrepreneurship by playing,” *Teaching and Teacher Education*, vol. 64: 291-304, (May 2017).

skills that will open up future job opportunities for students, but it will also increase productivity and benefit Mexico's economic growth.

Another suggestion for implementing a new "relevant" curriculum would be to increase research efforts to find the most in-demand skills in Mexico's economy. As mentioned in chapter III, there is a misalignment between the skills taught in higher education and labor force needs, which has resulted in unemployment and incompetence of higher education graduates in Mexico. Therefore, if Mexico increases collaboration between universities and companies, then both would receive benefits from sharing knowledge and having agreements on how to incorporate this knowledge into a company's productivity. Mexico's research and development (R&D) expenditure as a percentage of total GDP is 0.5 percent compared to the United States expenditure is 2.744 percent.²¹⁷ The lack of R&D staff in Mexico shows that to improve university-industry relationships, a prioritization in R&D government expenditure and incentivization to pursue a research career needs to be promoted.²¹⁸ Mexico's federal government should consider these initiatives to develop a more relevant curriculum that can potentially bring economic benefits in the future.

²¹⁷ The World Bank, "Research and development expenditure: Mexico 2016." (2016).

²¹⁸ Humberto Merritt, "The Role of Human Capital in University-Business Cooperation: The Case of Mexico," *J Knowl Econ*, (2015).

Recommendation #3: Internship and vocational opportunities

The last policy recommendation for Mexico's higher education institution is to implement more internship and vocational opportunities to develop critical skills to apply in the labor force. Internship and vocational opportunities is a skills development investment since it is a "wise investment because it is vital to reduce unemployment, inequality and poverty, and to promote economic growth."²¹⁹ Providing internship and vocational program opportunities especially in rural areas, and particularly for young women, could increase their productivity, which results in benefits for families and the overall economy.²²⁰

There should be a balance between preparing students with vocational-technical skills and general education to provide a well-rounded education. If students receive tangible skills from education, especially in rural areas, families can see the value in their education investment. As this thesis has supported, increasing school enrollment will not contribute to economic growth if the skills required for the workplace are not equitably distributed.²²¹ The key to the Republic of Korea's rapid economic growth was linking skills development with "strategies aimed at stimulating the economy."²²² Therefore, utilizing internship and vocational programmes to expose students to fundamental skills in the job market will benefit Mexican's professional and skill development. Internships in the United States have created a "rite of passage to a job or a career," but unpaid

²¹⁹ UNESCO, "Youth and Skills: Putting Education to Work," *EFA Global Monitoring Report*, (2012), 202.

²²⁰ *Ibid.*, 281.

²²¹ *Ibid.*, 205.

²²² *Ibid.*

internships can further create socioeconomic inequalities because they will be inaccessible to students who cannot afford to not earn money.²²³ Therefore, unpaid internships might not be as beneficial to the overall economy, although it is cost-effective for companies, since they restrict opportunities for people of disadvantaged socioeconomic backgrounds.²²⁴ Instead, Mexico should invest in paid internship opportunities for university students to apply their knowledge to the workforce. The biggest challenge would be funding these initiatives. A possible solution would be for Mexico's government to develop relationships with donors to increase funding devoted to internships. This can include large corporations that can economically benefit from investing in Mexico's labor force. Although this is not an easy process, it can provide future benefits for Mexico's economy and labor force.

²²³ Nicolas A. Pologeorgis, "Unpaid Internship Impact on the Labor Market," *Investopedia*, (October 5, 2018).

²²⁴ *Ibid.*

Final thoughts

Mexico has no other option but to invest heavily in quality education if they want to keep up with the international competition. We have seen how education can help ease some of Mexico's most significant problems such as possibly reducing violence and corruption while boosting economic growth. There are many areas Mexico's government can work on concerning their education system, but these three policy recommendations can serve as three focus areas that can push Mexico's economic development. Andres Manuel Lopez Obrador promised to improve the quality of education in Mexico, so we can only hope for Mexico's education system to move in a better direction. This thesis aimed to provide Mexico's current standing regarding education and how improvements in the quality of education can contribute to Mexico's economic development.

Personally, this thesis was important in understanding the disadvantages that my parents had in Mexico. Being a first-generation college student, I have been privileged to receive a quality education at an elite institution. I hope one day I can make a change in Mexico's education system. I am hopeful that education in Mexico will improve in the future.

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