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Who makes it to upper secondary level in Mexico?

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Abstract

Mexico is a federal republic and, at State level, huge differences can be found in the situation of post-compulsory education systems. The article explores de situation of the Mexican education system and in particular the chances its students have to make it to upper secondary level. The results show that despite the improvements and regulation changes to make upper secondary level compulsory, the system continues to reinforce socioeconomic selection making low-income students progression opportunities lower than their peers.

Key Words: compulsory education, education opportunities, socioeconomic selection

Introduction

There is a general consensus that the longer young people stay in education, the more chances they have to overcome poverty. Remarkable gains have been registered after the World Education Forum in Dakar with governments commitment to provide universal primary education with a focus on equity (UNESCO, 2009). Many countries have accomplished since then universal primary education and in some middle-income countries that achievement has increased demand for post-basic education (UNESCO, 2009). This is the case in Mexico, where those aged 15 and above achieve on average 9 years of schooling (Consejo Nacional de Población, 2010), which is equivalent to completing lower secondary (LS). As a consequence, the demand for upper secondary level (UPS) education has gradually increased in the past 10 years, putting increasing pressure on the post-compulsory education system.

Mexico is a federal republic and, at State level, huge differences can be found in the situation of post-compulsory education systems. Not only are there differences in the proportions of students of official UPS age (15 year-olds willing to continue studying after completing LS), but there is also great discrepancy on the number of schools available to them (Instituto Nacional para la Evaluación de la Educación, 2011). As the demand for UPS education has increased unevenly, public schools have introduced additional mechanisms of selection to allocate scarce spaces in some states. Furthermore, as neither the Federal nor State governments have regulations on the mechanisms and procedures for the transition to UPS, students face different modes of selection and admission that vary according to where they live.

In this article, I explore the situation of the Mexican education system and the chances its students have to make it to upper secondary level. This analysis is particularly relevant now that the UPS level has been made compulsory and the government has committed to make the level universal by 2021. The article is structured as follows: firstly, I present a brief overview of the Mexican education system. Secondly, I revise the main education outcomes in Mexico. Thirdly, I present the situation of the LS level followed by a description of the main results on the transition to UPS. Lastly, I present the conclusions of the analysis.

Brief Review of the Education System in Mexico

The Mexican education system is structured into five levels: first, three years of preschool education (ages 3-5); second, six years of primary at a compulsory starting age of 6 years-old (grade 1 to grade 6); third, three years of LS for children between the ages of 12 to 14 years-old (grade 7 to grade 9); fourth, three years of UPS for young people ideally between the ages of 15 to 18 (grade 10 to grade 12); and finally, higher education (Instituto Nacional para la Evaluación de la Educación 2006). Therefore, a normal school trajectory from basic to higher education without interruptions would last between 16 to 20 years depending on the field of study. Figure 1 shows how the education system is structured and summarises the types of schools provided at each education level as well as the age groups that each level should ideally enrol.

Figure 1 Structure of the Mexican Education System

Education Structure	Education Level	Type of Schools Available	Age	Duration in Years
Compulsory / Basic Education	Preschool	CENDI, General Indigenous, and Communitarian	3-5	3
	Primary	General, Indigenous and Communitarian	6-11	6
	Lower Secondary	General, Technical, Communitarian, Distance LS, and LS for Workers	12-14	3
Upper Secondary	Upper Secondary and Vocational Education	General Schools, Technical and technological schools	15-17	2-6
Higher Education	Undergraduate and Postgraduate education	Universities	-	-

The government is officially responsible for providing compulsory basic education, which includes: preschool since 2002, primary since 1867 and LS since 1993 (Instituto Nacional para la Evaluación de la Educación, 2009c). In 2010, the government made UPS part of compulsory education (Camara de Diputados del H. Congreso de la Unión, 2012), but this only came into effect in the 2012-2013 academic year. The Mexican Constitution (Article 3) states that "basic education (pre-primary, primary and LS) shall be free of charge, non-religious, and publicly provided; basic education and UPS education will be compulsory (…) The State will also provide higher education (…) The education provided by the government shall be of good quality and free of charge."

As we can observe, there is a slight difference between what is considered basic and compulsory education. The constitutional amendment in 2010 suggests that basic education continues to be from pre-primary to LS and adds that UPS level should be considered to be compulsory education. The difference is that basic education is free and as UPS is not part of basic education, the government does not pledge to provide it free of charge.

Education System's Outcomes

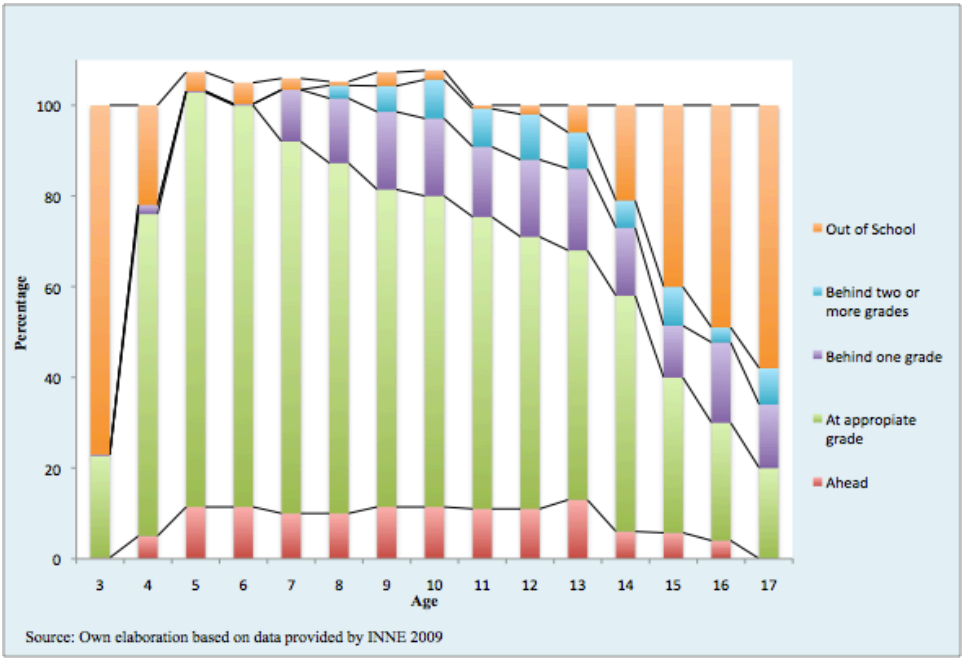
The enrolment rates in the education system vary by age. For example, in 2011, while close to 100 percent of 5-12 year-olds were enrolled at school (OECD, 2011), participation rates remained low for preschool and secondary age students (INEE, 2009). The enrolment rate starts diminishing for children in LS age (13 year-olds) to 98 percent. Moreover, enrolment rates start to rapidly decline for 14 year-old students, decreasing to 69 percent and 49 percent for 17 year olds.

Considering enrolment in terms of appropriate age, the education system has not yet accomplished, at preschool level, its aim to enrol all children of preschool age into first grade. At primary level while 90 percent of 6 year-olds are enrolled at grade 1 in primary

level, 69 percent of 11 year-olds are enrolled in grade 6. This suggests that even though students of primary age remain at school, failure to progress to the next grade is the main reason why they are not enrolled at the appropriate grade for their age (see Graph 1).

At LS the picture is dramatic. While 55 percent of 13 year-olds are enrolled in grade 7, only 34 percent of 15 year-olds are in grade 9. This can be explained by the fact that failure rates increase at LS (almost 30 percent of the population at this level are repeaters). In addition, repetition having accumulated from primary level means LS has the highest percentage of students who are two or more years over age.

Graph 1 Education situation of the school age population (2009)



It can be assumed that repetition, in association with socioeconomic deprivation, pushes students out of school. Starting with 13 year-olds and those of older secondary age, the out of school rates increase progressively, from 6 percent of 13 year-olds, to 21 percent of 15-year-olds. In other words, around 80 percent of the population that should be finishing LS are enrolled in school, but only 34 percent are at the appropriate grade. Furthermore, the striking increase in the number of adolescents out of school is more so at UPS level where 49 percent of 16 year-olds and 52 percent of 17 year-olds are not enrolled in school.

Other important educational indicators to look at include net enrolment rate (NER), survival, completion at appropriate age and transition. Figure 2 shows a summary of the education system's performance by level in each indicator.

Regarding NER, we can confirm the results shown in Graph 1 that at preschool level 20 percent of children between 3 and 5 years old are still not enrolled. The education system has accomplished enrolling all children of relevant age at primary level but still has not reached 18 percent of the LS age population. Lastly, at UPS the system is experiencing the challenge of not reaching 53 percent of the relevant population.

Regarding the survival rate, we can observe that 12 percent of the students at primary fail to progress to the next grade. This increases at LS to 22 percent of students, and at UPS rises dramatically, where 41 percent of students fail to survive.

It is worth mentioning that at primary level the main reason why students do not survive their grade rate is repetition, while at secondary level the explanation includes not only failure but dropout, especially at UPS level.

Regarding the transition between levels, the analysis of the probability of making the transition at normative age[1] suggests that a student has a 71 percent chance of completing the transition from primary to secondary at the official age. The chance of completing the transition from LS to UPS is 65 percent. In both transitions, girls have on average 5 percent more chance of completing the transition at a normative age, according to information provided by INNE in 2009.

In addition, using enrolment data from 2009 and 2010, we can see that 76 percent of the students enrolled in grade 9 in 2009 completed the transition and enrolled in grade 10 (UPS). Finally, of those that complete primary education at the appropriate age, 95 percent continue studying LS; and from those who complete LS at the appropriate age, 76 percent complete the transition to UPS.

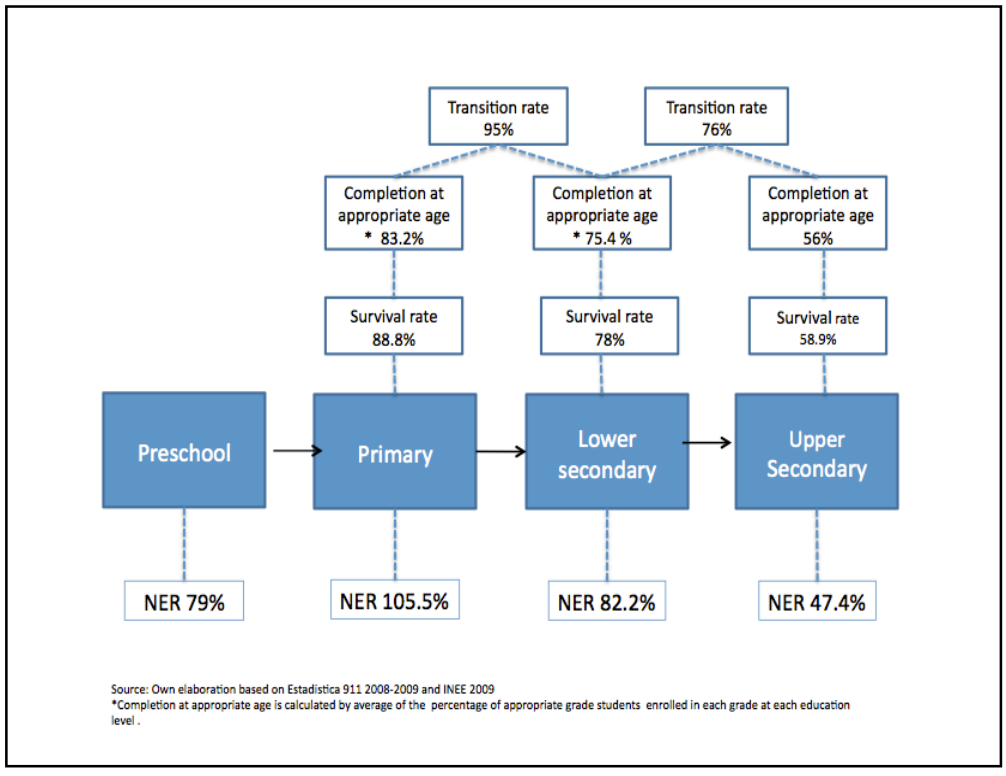


Figure 2 Mexican Education System's indicators of enrolment

1 Calculated with information of the school years 2002/2003, 2005/2006 y 2008/2009 provided by INNE 2009

The increased dropout at LS is worrying because, as pointed out by the OECD in 2011, a significant proportion of young Mexicans remain inactive in education or employment. The data suggests that 18 percent of the population between 15 to 19 years old are not in education or employment. For the same age group, women are 3.6 times more likely to not be in education or in employment compared to men of the same age.

Mexico has been trying to reverse the problem of adolescents and youths dropping out of school. Since the 1990s, a series of education reforms have focused on changing the structure and content of the curriculum, as well as making secondary education accessible and universal. Nevertheless, LS still faces several general problems, which will be further discussed in the following section, alongside the opportunities for access to LS.

Lower Secondary Education

This section focuses on the opportunities to access and stay at the LS level. Despite the improvement in LS school provision discussed previously, the goal of having the total population of 12 to 15 year-olds enrolled at school has not yet been accomplished. The access opportunities to LS are still unequally distributed among States.

To obtain a general picture of the situation of the LS age population, I performed an analysis of progression opportunities by examining a school generation that started the primary level in 2004 and who should be enrolling in LS in 2010. Only 4.6 percent of students that started school in 2004 did not complete primary in 2009. Therefore, the generation showed a 0.77 chance of completing primary in a normal 6-year cycle.[2] Once students got to grade 6, 99 percent of them completed the academic year and were ready to progress to UPS.

In the 2010 academic year, 2,229,998 students had a primary certificate and 93 percent of them completed the transition to LS. It is not surprising to find out that the probability of continuing to study LS varies across States. In the Federal District, only 1 percent of 15 year-olds did not attend school and from this group, 38 percent have never attended LS. In Chiapas, 30 percent of 15 year-olds are out of school and 65 percent of them were never enrolled in LS.[3]

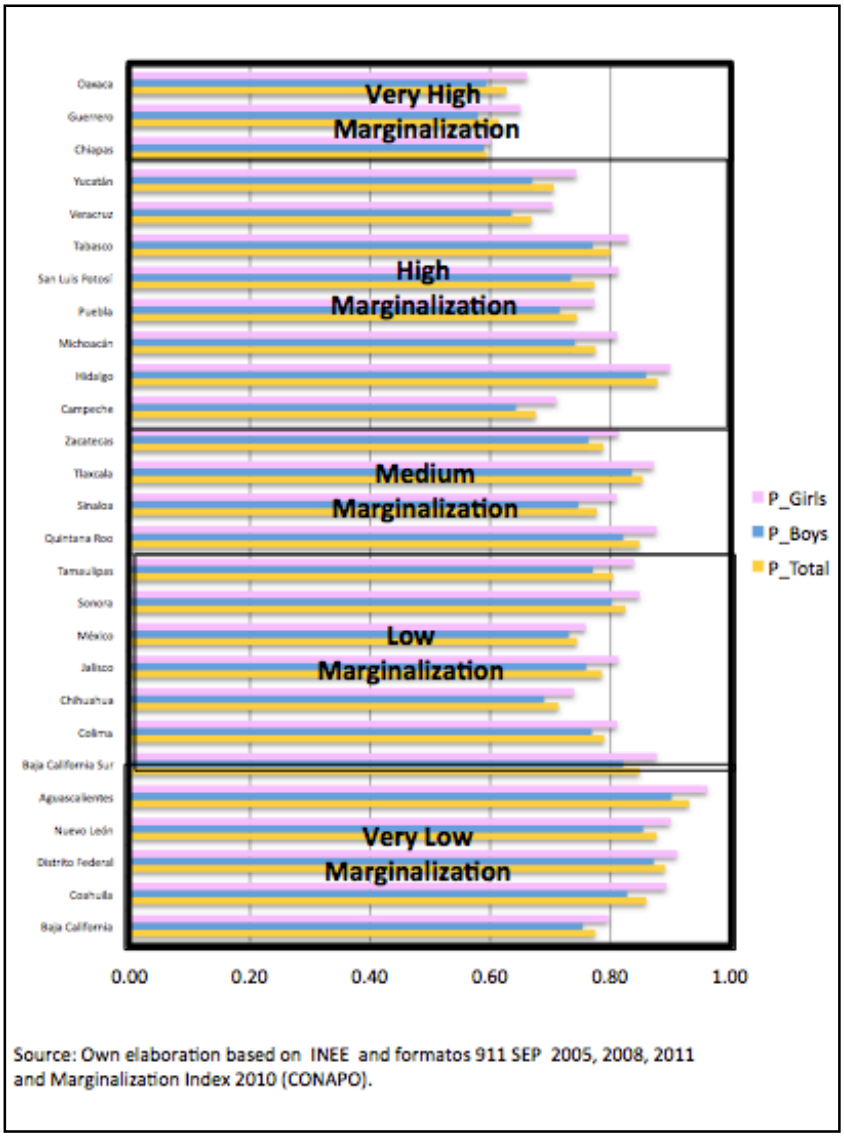
The probability of transition to LS at an appropriate age varies across States and the differences among States are very much related to each State's level of marginalisation[4]. Graph 2 shows the probability of continuing to study LS level at the appropriate age, arranged by the States' marginalization index from CONAPO in 2010. As we can see, students in States with very high rates of marginalisation show lower probabilities of reaching LS at the appropriate age in a range of 0.59 to 0.63. Conversely, students in States with very low marginalisation levels show on average a 93 percent chance of continuing studying at the appropriate age (own calculations based on 911 SEP 2004-2011).

2 The probability of the generation to complete primary in 6 years was calculated using the Formatos Estadisticos 911 from SEP in the period 2004-2009.

3 Calculations based on formato 911 (2010/2011) and Censo de Población y Vivienda 2010, Inegi.

4 Marginalisation is seen as a structural phenomenon constructed by multiple dimensions, shapes and intensities of exclusion in the development process (CONAPO, 2011). CONAPO constructed a marginalisation index by municipality and State level in 2010 .This takes into consideration the following dimensions: education (illiterate population and population without primary education), dwelling (draining system, electricity, level of overcrowding, drinking water, and housing flooring) population distribution and income.

Graph 2 Probability of continuing to study Upper Secondary at appropriate age



Source: Own elaboration based on INEE and formatos 911 SEP 2005, 2008, 2011 and Marginalization Index 2010 (CONAPO).

Considering that the lack of LS offer is no longer an issue, students' personal, schooling and context conditions must be the reasons for the discrepancies in transition probabilities. These conditions include the fact that in very highly marginalised States, the quality of education is well-known to be below standard. In particular, States with very high levels of marginalisation have been associated with low-quality schooling, either because the teachers are not qualified or trained, or because the school infrastructure and climate are poor (Reimers, 2000). Poor schooling experiences often mean that students do not learn what they are expected, fail or have low educational motivation. These characteristics are associated with repetition, which at primary level is a significant reason for students not completing the transition at the appropriate age.

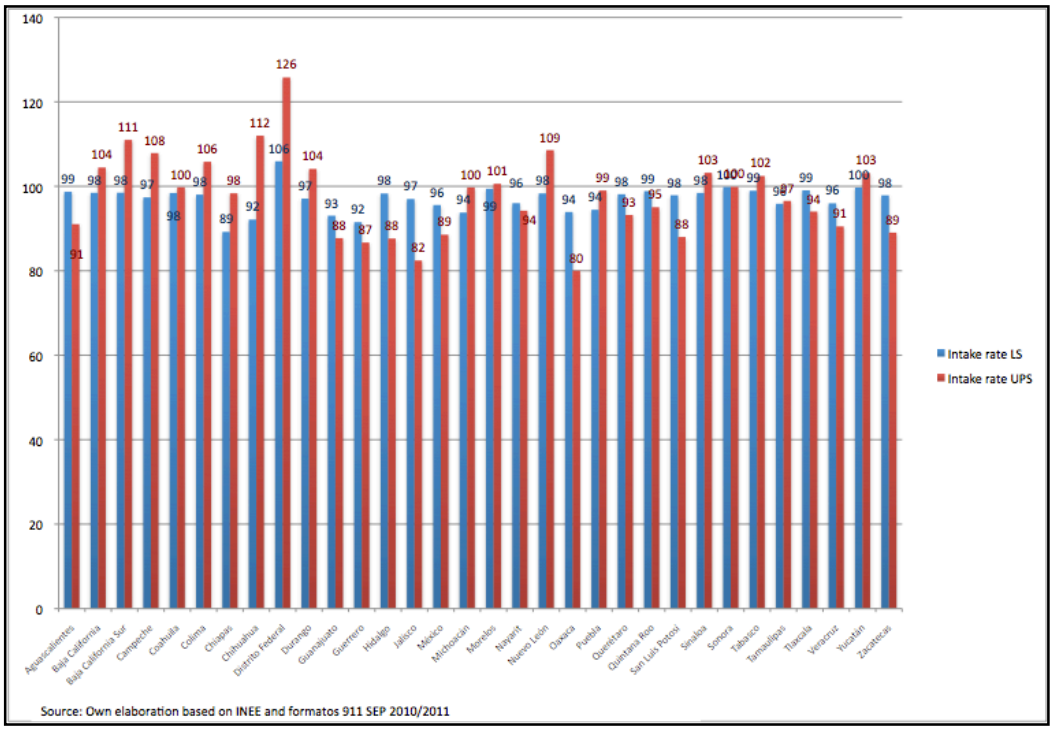
The different characteristics of the States in terms of their education system, education quality and the progression opportunities provided are believed to affect who gets to grade 9 with a good chance of making a successful transition to UPS level. In the following section, I further explore issues related to UPS level transition.

Transition to Upper Secondary

UPS schools have three core options: general, technological and technical professional. It is important to highlight that there are a wide variety of options available and each institution has its own normative framework and curriculum plan but despite this it appears that there are similarities between them (Instituto Nacional para la Evaluación de la Educación, 2011). Interestingly, they do not have any sort of link either at an informal communication level, or through application processes or planning. There are a total of 14,427 UPS schools in Mexico that are expected to ideally enrol 6,710,948 adolescents from the ages of 15 to 17 years old (Censo de Población y Vivienda, 2010).

That suggests that each UPS school would need to enrol 465 students, which explains the lack of capacity (UPS schools in Mexico have the capacity to enrol 320 students on average). If we consider the number of students that graduated from LS in 2011 (1,775,728 students), each school would have to enrol 123 students in grade 10. However, based on my calculations, I estimate that UPS level schools have 100 places for each freshman year. That suggests that if all LS graduates want to continue studying, there are not enough places to enrol everyone. This has an impact on the application and selection processes that schools will use, which translates into an increase in the competition for a place in schools with high demand.

Graph 3 Net Intake Rate (NIR) at LS and UPS by State

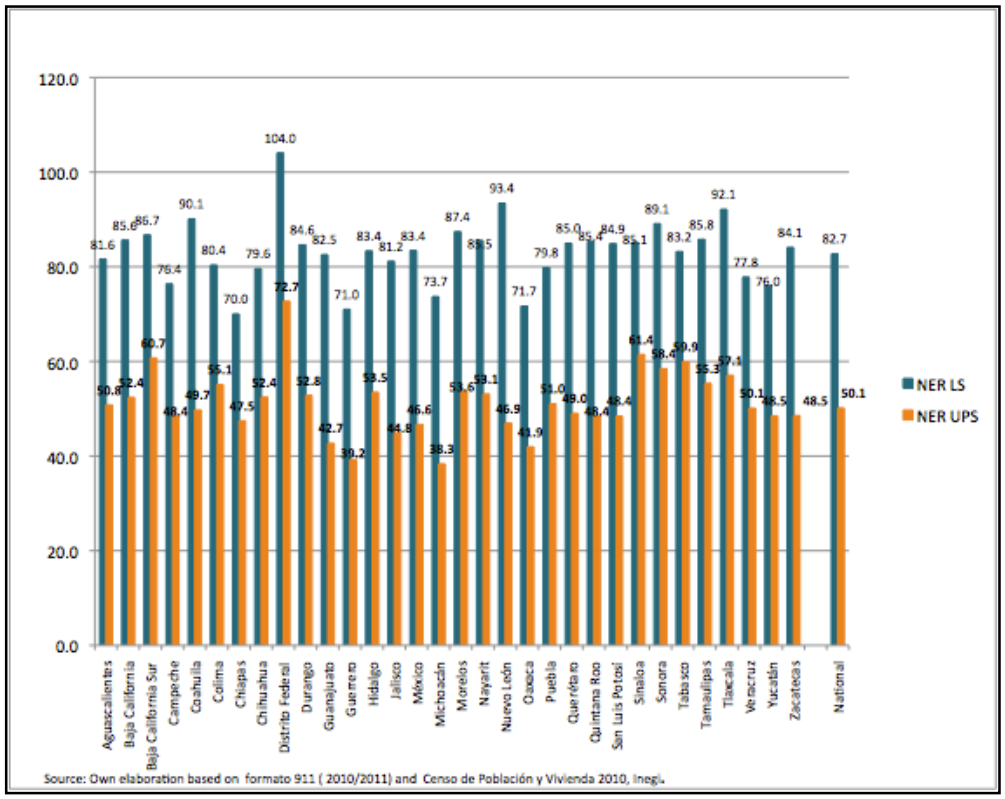


Transition rates would be a key measurement of enrolment opportunities at UPS; nevertheless, in the absence of available longitudinal data in Mexico I can only calculate the intake rate. In Graph 3, I compare the Net Intake Rate (NIR) at LS and UPS by States, as it shows the differences in selection ratios among the education levels. It is important to keep in mind that NIR measures new entrants who are at the official age (12 and 15 years-old at LS and UPS respectively), expressed as a proportion of the relevant age groups. Therefore, the results observed measure the proportion of students that have made the transition to LS and UPS at the appropriate age. This measurement is limited as it cannot track how many of them are returning to education after a gap or how many are students repeating the freshman year.

The graph above highlights that the NIR at UPS of some States such as Federal District, Baja California, Baja California Sur, Chihuahua and Nuevo León show values of over 100 percent. This should be interpreted with care as more than simply being an overrepresentation of students; the NIR suggests a mobility of students within those States that are considered to have better quality in their education provision. For the rest of the States, the NIR shows better figures at LS than at UPS, which suggests that the population that make it to LS at the appropriate age is greater than at the LS level.

At a national level, it is estimated that 96 of every 100 15 year olds are enrolled at UPS, while LS has the same representation. The lowest NIR at UPS is recorded in Oaxaca (80 percent), Jalisco (82.4 percent) and Guerrero (87 percent) and it is in these states that the largest differences between LS and UPS NIR are found, not to mention Hidalgo and San Luis Potosí.

Graph 4 Net Enrolment Rate (NER) at LS and UPS by States



Furthermore, enrolment rates at LS and UPS levels are dramatically different as Graph 4 shows. The national average net enrolment in LS is 82.7 while at UPS it is 50.1, a difference of 32 percentage points (significant at 95%). The Federal District is the one that shows the highest enrolment at both levels with over 100 percent attending LS and 72 percent at UPS level.[5] Guerrero is the State that shows the lowest enrolment rate at both LS and UPS level (71 and 39 percent, respectively) with a difference between levels of 44 percentage points.[6]

In Graph 4, it can be observed that the States with the largest enrolment differences are Michoacán, Guanajuato and Nuevo León (in descending order). They each have very interesting characteristics and no evident similarities. Michoacán shows low enrolment rates at both levels (73.7 and 38.3 at LS and UPS, respectively) with a difference of 48 percentage points between levels. Michoacán, which has a high level of marginalisation, has generally been seen as a State with low education outcomes; therefore, low levels of

5 The Federal District has the capacity to enroll 92 percent of the relevant population that completed LS in 2010.

6 For analysis purposes it is relevant to observe the lowest and greatest enrolment differences between LS and UPS level. The States with the lowest enrolment differences between LS and UPS are listed as follows in descending order: Tabasco, Sinaloa and Baja California. In Tabasco State the UPS NER is 60 percent with a difference of 28 percent points more at UPS; in Sinaloa UPS NER is 59 with a difference of 27.8 percent points; in Baja California UPS NER is 61.4 with a difference of 30 percent points. A similarity between all three is that they are States with medium level enrolment with an average of 86 LS NER and 60 percent at UPS; although with different levels of marginalisation

enrolment and a large gap between levels is not surprising. Guanajuato has an enrolment rate of 82 percent at LS and 43 percent at UPS, with a difference of 48 percentage points. Guanajuato is usually located above the mean in education results with medium levels of marginalisation.

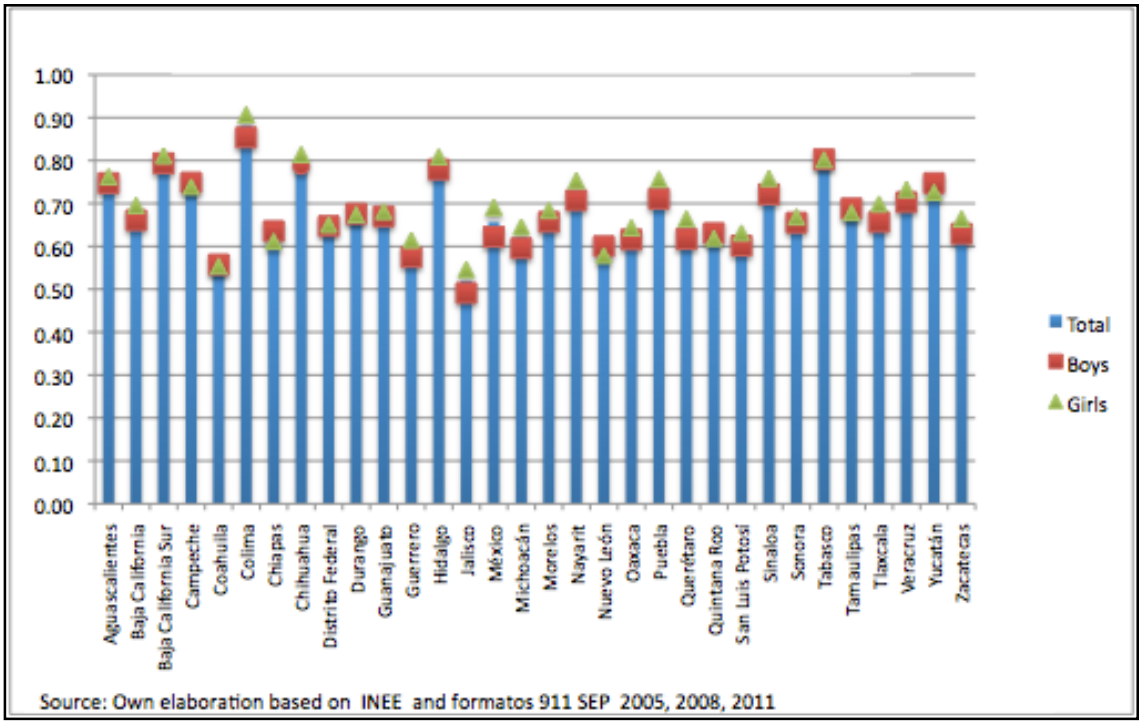
Conversely, Nuevo León has the highest difference between levels (48 percent points), very low levels of marginalisation and in general is located at the top of education indicators. The enrolment at LS is 93.4, percent which positions the State in second place at the national level but, at UPS, the State only enrols 47 percent of the relevant population, despite having an infrastructure capacity to enrol 83 percent. Why such different States report such large gaps in enrolment at secondary level is a question that needs more in-depth analysis. What the data seems to suggest is that enrolment at UPS is not related to States' development, education capacity in terms of infrastructure[7] or education outcomes in basic education.

With respect to the probability of students continuing studying UPS at the appropriate age, Graph 5 shows that on average students have 0.66 chance of starting UPS at the age of 16. That is 11 percent less when compared to LS. Girls have 0.68 chance of continuing to study at the appropriate age compared to 0.67 of boys. The gender gap in the probability of starting UPS at the relevant age has narrowed compared to LS, where the difference is 6 percentage points. This fact can mean that once students graduate from LS (when girls show better results), the chances are similar for boys and girls. Also, it can be inferred that the gap narrows because when a boy manages to stay in education and complete LS, he is more likely to continue studying and that girls who finish LS (basic education) have more chances of not continuing their studies.

The UPS enrolment is also influenced by socioeconomic and cultural conditions. INNE's study in 2011 found that 24 percent of the population of 15 to 17 year-olds with LS degrees are not enrolled at school (1.2 million people). Referring to socioeconomic conditions, the number of adolescents aged between 15 to 17 years old who have LS degree enrolment at UPS is as follows: 64 percent of those live in rural areas, 61 percent come from indigenous households, 60 percent live in poverty and 67 percent live in highly marginalised communities. Therefore, only 40 percent of disadvantaged adolescents have the opportunity to enrol at UPS level.

7 Michoacan has the capacity to enroll 86 percent of the population that completed LS in 2010; Guanajuato has the capacity to enroll 81 percent and Nuevo Leon has the capacity to enroll 85 percent.

Graph 5 Probability of continuing studying Upper Secondary at the appropriate age



Overall, the data presented confirms that the transition to UPS appears to be an important bottle-neck for students' progression. This bottleneck appears to be related to differences in States marginalisation levels and general characteristics. The results also suggest that gender differences do not appear to be important in defining who makes it to UPS level.

Final Remarks

The article described the general characteristics of the Mexican education system, in particular at the LS and UPS levels. It highlights that despite the accomplishment of universal enrolment by the Mexican education system a basic education level, there are problems worth noting, as they are relevant to the transition to UPS level. Moreover, as the UPS level has only very recently been incorporated as part of compulsory education, issues of dropout and overage progression in LS acquire more relevance as they define whether UPS school age adolescents will be able to access UPS. It is also relevant to keep in mind the issues of States' inequalities, not only in terms of education outcomes but also in terms of the States' educational capacity to provide UPS services. Therefore, it is important to highlight the differences in the transition processes by State level, as well as how students are selected into UPS because it is likely that this would affect students' chances to make a successful transition, especially in those States where UPS access and enrolment remain low.

Overall, this article shows an education system that is making progress and where gender gaps are virtually non-existent, but which still struggles to keep young adolescents in education. It is also an education system where students' social inequalities (and context inequalities) seem to define their chances of progression, and, where capacity and outcomes are highly unequal among States.

References

Cámara de Diputados del H. Congreso de la Unión. (2012). Constitución Política de los Estados Unidos Mexicanos, S. a. d. S. Parlamentarios, (ed.): Mexico City.

Consejo Nacional de Población. (2010). La situación actual de los jóvenes en México.

Consejo Nacional de Población. (2011). Índice de marginación por entidad federativa y municipio 2010. Mexico City.

Consejo Nacional de Población. (2010). "Encuesta Nacional de Hogares.," Censo de Población y Vivienda. (n.d.). (ed.). Mexico City: Censo de Población y Vivienda.

Instituto Nacional para la Evaluación de la Educación. (2006). Evaluación del acceso y la permanencia de alumnos en el sistema educativo: un seguimiento desde los tres hasta los 10 años. Instituto Nacional para la Evaluación de la Educación, Mexico.

Instituto Nacional para la Evaluación de la Educación. (2008). Panorama Educativo de México. Sistema Nacional de Indicadores.

Instituto Nacional para la Evaluación de la Educación. (2009a). El Aprendizaje en tercero de secundaria en Mexico. Informe sobre los resultados de Excale 09, aplicación 2008. Instituto nacional para la evaluación de la educación, Mexico.

Instituto Nacional para la Evaluación de la Educación. (2009b). "EXCALE", I. N. p. l. E. d. l. Educación, (ed.). City: INNE: Mexico City.

Instituto Nacional para la Evaluación de la Educación. (2009c). Panorama Educativo de Mexico. Sistema Nacional de Indicadores 2009.

Instituto Nacional para la Evaluación de la Educación. (2009d). "Panorama Educativo de Mexico. Sistema Nacional de Indicadores 2009.

Instituto Nacional para la Evaluación de la Educación. (2011). La educación Media Superior en México.

OECD. (2006). Policy brief on Mexico: Education.

OECD. (2009a). PISA 2009 Results: What Students Know and Can Do. Student Performance in Reading, Mathematics and Science.

OECD. (2009b). PISA 2009 Technical Report. OCDE.

OECD. (2009c). "PISA-MEXICO", PISA, (ed.). City: INNE: Mexico City.

OECD. (2011). Education at a Glance 2011. OCDE indicators. Paris.

OECD. (2013). PISA Grade Expectations. Paris: OECD Publishing, Paris.

Reimers, F. (2000). Unequal Schools, Unequal Chances: The Challenges to Equal Opportunity in the Americas., Cambridge, MA: Harvard University.

Secretaría de Educación Púbica. (2004). "Formatos 911", S. d. E. Púbica, (ed.). Mexico City: Secretaría de Educación Púbica.

Secretaría de Educación Pública. (2005). "Formatos 911", S. d. E. Pública, (ed.). Mexico City: Secretaría de Educación Púbica.

Secretaría de Educación Pública. (2010). "Formatos 911", S. d. E. Pública, (ed.). Mexico City: Secretaría de Educación Púbica.

Secretaría de Educación Pública. (2011). "Formatos 911", S. d. E. Pública, (ed.). Mexico City: Secretaría de Educación Púbica.

UNESCO. (2009). Overcoming inequality: why governance matters. Paris: Oxford University Press.

UNESCO. (2010). Reaching the marginalized. UNESCO, Paris.

Weiss, E., Quiroz, R., and Santos del Real, A. (2005). Expansión de la escuela secundaria en México. Logos y dificultades en eficiencia: UNESCO, Instituto Internacional de Planeamiento de la Educación.