

# Comunicación y Sociedad

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## The Presence of *México Conectado* in Primary Education

*La presencia de México Conectado  
en la educación básica*

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This article depicts a research dealing with *México Conectado*, a federal government program –turned on in the period 2012 thru 2018– aimed at improving digital connectivity in public spaces such as primary schools. The exploration was carried out by looking the state of connectivity, presence and use of Internet in twenty public schools in the Guadalajara’s metropolitan area, Jalisco, Mexico. Results tend to contradict the official policy and discourse regarding the state of connectivity, particularly in the school system. The conclusion is that government figures concerning educational use of Internet tend to cover up realities that should be explored academically in a deeper way.

**KEYWORDS:** Education, conectivity, Internet, Jalisco, public policies.

*Este trabajo arroja los resultados de una indagación sobre la presencia del programa México Conectado en 20 escuelas públicas de educación básica en la Zona Metropolitana de Guadalajara, Jalisco, México. El programa fue desarrollado por el gobierno federal entre los años 2012 y 2018. Los resultados tienden a contradecir el optimismo del discurso oficial y arrojan cuestionamientos sobre la presencia y funcionalidad de la conectividad digital aun en entornos educativos urbanos de mediana marginalidad. La conclusión es que las estadísticas oficiales esconden realidades que deben explorarse en ejercicios académicos de mayor profundidad.*

**PALABRAS CLAVE:** Educación, conectividad, Internet, Jalisco, políticas públicas.

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## INFORMATION RIGHTS

It seemed unthinkable, or at least a remote possibility for the majority of the Mexican population, but on June 11, 2013 the Constitution included the universal right to have access to the World Wide Web: the Internet. The modification and addition of dispositions in eight articles of the Political Constitution of Mexico, which was also known as the *Reforma de la Radiodifusión y las Telecomunicaciones* (The Broadcast and Telecommunications Reform), paved the legal way for the citizens of this country to demand their inclusion in the world of digitalization.

As a starting point, article 6 of the Political Constitution of The United Mexican States (referring to information access and freedom of expression) established the State's obligation to ensure "the right to have access to information and communication technologies as well as to the broadcast and telecommunications services, including broadband and the Internet" (SEGOB, 2013). In addition, in the 14<sup>th</sup> article (transitory) the constitutional reform stipulated the obligatory character of a policy of universal digital inclusion of which the Federal Executive Power would be in charge, what is more, it set goals to evaluate the advances made in this regard; basically that:

At least 70 per cent of the households and 85 per cent of all the micro, small and medium-sized enterprises nation-wide have access with actual speed to download information in agreement with the average recorded in the countries members of the Organization for Economic Cooperation and Development (SEGOB, 2013).

Finally, Article 16 (also transitory) pointed out that:

The State, through the Federal Executive, in coordination with the Federal Telecommunications Institute, shall ensure the installation of a shared public telecommunications network that promotes the effective access to broadband communication and telecommunications services... (SEGOB, 2013).

The constitutional mandate for digital inclusion was, in more than one sense, unequivocal. Its implementation is, of course, cause for debate and analysis nowadays.

## THE ICT IN A CONTEXT OF SOCIAL INEQUALITY

The Telecommunications Reform, one of the so-called “structural reforms” of the Peña Nieto administration (2012-2018), aimed to establish a series of corrective policies for a situation that had become critically evident in the times prior to its implementation. In a recurrent manner, the diagnoses developed from time to time by the Organization for Economic Cooperation and Development (OECD) in the field of communications revealed the inconsistencies of a sector of the national economy fraught with distortions and erroneous public policies. Thus, despite its growth and dynamism from the 1990’s to 2000, the telecommunications sector in Mexico showed unequivocal symptoms of atrophy. The OECD itself pointed at the following, among other factors that distorted the buoyant communications market: a) the impossibility for foreign investors to invest in a market that was closely shut, protected and monopolized; b) the opacity of legal and regulatory processes in the field of concessions and permits; c) lack of autonomy of the authorities responsible for regulating the sector; and d) the prevailing monopolization and the authorities’ inability to generate environments for effective competition. All of this in detriment to the “consumers”, who had to put up with deficient, expensive services, in addition to the fact that the internal market itself suffered from significant inequalities and limitations. This is how the OCDE reported it at the moment:

In terms of the total number of land lines, Mexico ranks eighth within the OECD, but in terms of land line per 100 inhabitants, it ranks 34<sup>th</sup>. In the sector of cellular communications, Mexico is in the fifth place of the ranking in terms of total number of subscribers, but it is 33<sup>rd</sup> out of 34 OECD members regarding the number of subscribers per 100 inhabitants. Similarly, in the broadband market, it ranks tenth in respect of total number of subscribers, but at the end of 2009 it occupied the last spot considering the total percentage of subscribers (Organization for Economic Cooperation and Development [OECD], 2012, pp. 18-19).

In addition to these indicators, the above-mentioned report put emphasis on the serious problem of concentration regarding market

control: practically 80 per cent of the land line subscriptions, and 70 per cent of cellular lines, were in the hands of only one corporation (with two denominations: Telmex and Telcel, respectively). It should also be pointed out that the scenario was particularly worrisome considering the dizzying growth of certain services, such as cellular telephony. In the first decade of this century, the number of subscribers for this service almost quintupled to reach 76 per cent of the country's inhabitants, and that market was mostly captured by only one provider.

Cellular telephony was not the only territory in expansion. The households equipped with at least one computer tripled during the first ten years of this century, and by the year 2015 one third of the households were enjoying that status. The same can be said about digital connectivity: between the years 2001 and 2010, the percentage of households connected to the Internet rose from 6.2 to 22.2 per cent, and five years later it reached 33 per cent of the homes (Arredondo, 2016, pp. 196-197).

However, the dizzying growth of the Mexican telecommunications market was carried out (and is being carried out) in a context of contrasting social and regional inequalities, that is, in a rich country, where the stamp of poverty is and has been unquestionable. That is how Esquivel described it synthetically in the report made and published by Oxfam in the year 2015: one per cent of the population in Mexico hogged 21 per cent of the national income, and the wealthiest 10 per cent of Mexicans concentrated almost 65 per cent of the national wealth. And what is still more, according to the same analyst, in 2014 a select club of 16 millionaires accumulated a wealth surpassing 140 billion dollars. Among them, the telecommunications tycoon, the richest man in the country: Carlos Slim (Esquivel, 2015, p. 8). In contrast, it was estimated that more than half the population survived in conditions of poverty and that approximately one tenth of the population was subjected to levels of extreme poverty. Only 20 per cent of Mexicans are free from marginality.

As if this were not enough, among the indigenous population—one of the most excluded segments in the country—the proportion of “non poor and non vulnerable” barely represented 2.5 per cent of this segment. Furthermore, according to Esquivel, the gap between benefits

from the capital and the work factor in the past three decades had widened significantly in a way so that, considering the distribution of national income, more than 70 per cent of the GIP concentrated in the capital factor, whereas less than 30 per cent was explained by the labor factor (Esquivel, 2015, pp. 25-32).

Inequalities in Mexico have an unquestionable correlate in the world of communications (with the exception of the almost universal access to television and with the accelerated penetration of cellular telephony). This reflection of contrasts and inequalities is expressed not only among the different segments of the population, but also among the different regions of the national territory. In Mexico, the association between geographical area, wealth and digital connectivity or access to certain communications services is quite clear to date. In general terms, digital connectivity tends to manifest with greater intensity in those states of the Republic and in those regions which in turn have better indicators of socioeconomic welfare and development.

It is not our intention to simplify, but it could be stated that the digital connectivity map in Mexico stands out in that it reflects a clear-cut division between a rich, connected north of the country as opposed to an impoverished, disconnected south (Arredondo, 2017). This division is complemented when the referent includes the situation showed by urban areas as opposed to rural regions. The gap between the countryside and the city is an irrefutable fact. The most recent report by the National Institute of Statistics and Geography (INEGI) confirms that the use of ICT is considerably greater in the country's 49 major cities as opposed to its rural areas. In fact, the percentage of Internet users in urban area clusters is 12 points greater than the national average (INEGI, 2019). And as if this were not enough, it can be said that even within the major urban conglomerates inequalities persist among those georeferential spaces (AGEB's) with greater social development indicators (for example, educational levels) and their counterparts with less development. That is why it is possible to argue that the socioeconomic polarity that characterizes a country like Mexico has clear reflections, like a waterfall, in the future of an emerging society like the information society.

## TWO DECADES OF PUBLIC POLICIES

Though it is true that the Telecommunications Reform in 2013-2014 was the result of a variety of prevailing conditions in this sector (the monopolization of the services, inconsistent regulations, market unbalance, etc.), it is also undeniable that its impact resulted in the ideal of a “distributive justice of digitalization”; in other words, in the need to open the channels for the population at large to have the right to participate in the so-called information and knowledge society, starting from an elementary condition: to have access to the World Wide Web services. A fact that at first involves the territory of telecommunications infrastructures, but it ends with the capacities the citizens have to take advantage of technology in the best possible way.

In Mexico, the attempts at favoring the expansion and incorporation of information technologies to the economy and social development (health, education, public administration, etc.) from the context of public policies date back at least from the 1990's. But it was not until the beginning of the present millennium, coinciding with the first experience of political alternation at the federal level, when talk started about a need for a “national digital strategy”. The administration headed by Vicente Fox (2000-2006), implemented an ambitious program that he christened with the name *Sistema e-México*, whose objectives included, among others, reduction of differences in ICT access in the national territory, actions to incorporate digitalization in education and public health and impacting the e-government systems at all its levels (the municipal, state and federal), in addition to promoting digital economy, supporting ethnic and linguistic integration, generating proper regulatory frameworks and protecting the privacy of Internet users (Aldama, 2007). An ambitious program that, like that administration, left many unfulfilled promises.

The Fox project was followed by the Felipe Calderon's administration and its project (2006-2012), which with some variations added to its predecessor's objectives, which does not mean that they were able to fix some issues of the serious backwardness afflicting national digitalization. Some changes in appearance, like the fact that it replaced the *Sistema e-México* for a General Coordination of the Information

Society, were not enough to solve the Calderón government failures on the subject of communications and transport. These failures were probably overshadowed by those materialized in the so-called “drug war”, which characterized the sad destiny of the second alternation government.

The national digital agenda implemented during the Calderón administration contributed little to promote dynamics that would tackle the unbalance and inconsistencies prevailing in the use of ICT in the country’s economy, social development and public administration. In fact, it was in the late days of such administration that the OECD (2012) report was made and published denouncing the serious situation of the sector and it inspired the subsequent Telecommunications Reform.

The following federal administration, led by Enrique Peña Nieto (2012-2016) –the president of the ephemeral restoration of the old regime– was inaugurated with the above-mentioned constitutional Reform and with promises that pointed at substantial changes in the field of national digitalization. The objective was, among others, to establish a “Policy of Universal Digital Inclusion” and a “National Digital Strategy” to bring the population closer to ICT and broadband (Secretaría de Comunicaciones y Transportes [SCT], 2016). Among the ten strategic projects established to increase digital connectivity in the country, the one known as *México Conectado* stood out (Internet in public places). In the background of these government initiatives were the recommendations of the *Broadband Commission* of the International Telecommunications Union (ITU), and the United Nations Science Education and Culture Organization (UNESCO), tending to reduce the digital gap in all its manifestations.

The *México Conectado* project intended to take broadband Internet to all the public places and spaces in the country. In particular, it intended to promote Internet access among students and teachers from all the levels of education and among healthcare workers. To this end, the program was based on the use of two technologies: a) satellite technology to provide access for rural communities (with fewer than 2 500 inhabitants and with marked levels of marginalization); and b) the land infrastructure deployed by telecommunications operators (private companies), in the case of urban areas. The strategy included

coordination with the republic's state authorities from which the list of public places to be connected would emerge, in addition to the setting up of a Connectivity Technical Committee and a Usage Technical Committee in every town (Rodríguez et al., 2018).

The original goals that were set by the program were not less ambitious. Their intention was that by the time that government term ended in 2018, broadband Internet connectivity had expanded to 250 000 public places or hotspots. However, the results of this program were not that optimistic; the official statistics would reveal that the final result was little over 100 000 hotspots. By far fewer than the number estimated at first. Thus, the original purpose of *México Conectado* had to be diluted (the technocrats would say adjusted) to the resources that were actually available for their operation. Of the 2 600 million pesos allotted in the first year of its operation (2014) the *México Conectado* budget was adjusted to the bear market the following year at 2 421 million pesos; subsequently in 2016 it was cut down to 700 million pesos and in 2017 it barely reached 288 962 000 pesos (a little over 10 per cent of the initial budget). Budget cuts and reduction of goals characterized the fate of the connectivity policy in a federal administration whose sign of distinction was corruption.

### CONNECTIVITY AND EDUCATION: FRUITLESS PROJECTS

Over almost two decades, digital connectivity policies in Mexico have been linked with education. Initially, the Vicente Fox government based its strategy in this issue on the so-called *Centros Comunitarios Digitales* (CCD'S or Digital Community Centers), but above all on the "star" educational program known as *Enciclomedia*.

The ideal of outfitting public primary schools with technologies that would make it easier for teachers and students to have access to knowledge by means of the Internet was the center of *Enciclomedia*. There were four strategic axes through which this program sought to contribute to improving the quality of education: 1) software development, by making interactive didactic resources; 2) adapting and equipping the classrooms, on the basis of hiring services for several years with private companies; 3) training teachers with the pedagogical

preparation to use the new technologies in the classroom; and 4) follow-up and evaluation of the students' learning process (ASF, 2018).

Supported by the original design of the Instituto Latinoamericano para la Comunicación Educativa (Latin American Institute for Educational Communication, ILCE) and with Microsoft's consultancy, Fox's flagship connectivity program, *Enciclomedia*, kept an erratic course until it disappeared after having been in operation for eight years. The fruitless fate of the program was summarized by the Auditoría Superior de la Federación (ASF), a Federal Congress body, in the following terms:

... from 2004 to 2012, Enciclomedia showed significant irregularities in its delivery and functionality, monitoring and follow-up, connectivity, lack of planning, limited coverage and lack of transparency in the resources, which caused its contribution to the improvement of the country's education to be perceived as questionable; mainly because of the cost it represented in terms of taxpayers' money, and the SEP was incapable of ensuring the correct function of the 21 434 ASA classrooms and the 125 562 MMS classrooms (Auditoría Superior de la Federación [ASF], 2018, p. 208).

The Fox government attempts were compounded by those of its successor, Calderón's, who implemented the *Programa de Habilidades Digitales para Todos* (Digital Skills for All Program, PHDT) and between 2009 and 2012 he intended to correct the mistakes that plagued his predecessor's project and stamp his seal in the primary education sector. The PHDT was set in motion with an approach focusing in improving learning, in primary and secondary education by making use of ICT and incorporating small pieces of interactive software. The PHDT sought to give continuity to the program that had preceded it by providing telematic classrooms, with computers and preloaded educational materials for the teaching staff in primary school, as well as laptops or other kinds of individual devices in secondary education. Nevertheless, the PHDT did not escape a series of technical, operative and pedagogical deficiencies that, like *Enciclomedia*, questioned the good intentions of the digital strategy implemented by that government.

The government of the PRI (Revolutionary Institutional Party) restoration, that of Peña Nieto (2012-2018), was not left behind. Among other efforts, this administration set in motion the program *Laptops for Children taking the 5<sup>th</sup> and 6<sup>th</sup> grades of primary school*—with a reach limited only to three of the 33 states of the country—and the program *Digital Inclusion and Literacy*, with a coverage that did not surpass 50 per cent of the states in the country. Both programs were part of the project called *@prende2.0* and the Secretaría de Educación Pública (The Public Education Department, SEP) was in charge of them. According to the ASF, these efforts, like the ones that preceded them, were insufficient to establish an efficient model of the use of technologies in public institutions of primary education. These programs were fraught with serious problems with planning, follow-up, connectivity, coverage and transparency in managing the resources, not to mention the noticeable flaws in terms of pedagogical practices (ASF, 2018, p. 218).

### *Digital educational connectivity and its fallacies*

The longing for universalizing Internet, and above all, broadband access in Mexico, does not seem to be fulfilled despite the promises made and the resources used for almost 20 years. That is so despite the mandate stipulated by the country's Constitution since 2013. That is how official and authorized evaluations certify it, as well as the journalistic exercises that have reported on that reality. For example, an exploration carried out by the journalistic group Reforma in November, 2018 in the Guadalajara Metropolitan Area (ZMG) revealed in a random sample of 83 of the 3 202 public hotspots reported in the Jalisco state capital, only in 31 per cent it was possible to get the signal and make some use of the network: “In 41 per cent of these places it was not possible to detect any network of the program (*México Conectado*), while in 14 per cent the signal was detected, but it was not possible to surf the net, in an additional 14 per cent, it requested a password that the user did not know” (Gutiérrez & Rivera, 2018).

Educational spaces have been particularly the object of the official pretensions to increase digital connectivity substantially and incorporate the students to the world of technologically-mediated information.

In fact, in the context of the budget cuts suffered by the connectivity program, the authorities responsible for the program claimed that, despite the adverse circumstances, educational spaces would remain a priority over other public places in the digital connectivity policy. In fact, official statistics in its final balance pointed out that over 68 per cent of the 101 000 hotspots in the country were located in the territory of education (Rodríguez et al., 2018).

At the end of the Peña Nieto six-year period, in the year 2018, the state of Jalisco was among the five states of the republic with the greatest number of public hotspots reported by the *México Conectado* program. Of the 5 555 hotspots, a little over 57 per cent were located in the ZMG. It should be remembered that Jalisco and its capital, Guadalajara, have been privileged spaces with great development in the national context. So much so that, not without some exacerbated optimism, Jalisco's capital has been labeled "Mexico's Silicon Valley" by certain personalities of the political and entrepreneurial world, due to the alleged vocation for technological innovation that rules in this territory.

## METHODOLOGY

With the purpose of exploring in greater detail the presence and functionality of the *México Conectado* program in the educational context, in December, 2018 we undertook an inquiry exercise in 20 primary education schools located in the Zona Metropolitana de Guadalajara (ZMG). The objective was to assess the condition and quality of connectivity in these educational facilities that were included in the so-called "hotspots" of the program in question.

The exercise of collecting information was carried out by means of a random sampling in 20 public primary schools that are within the *México Conectado* federal program and therefore they were registered as hotspots. For the selection of the schools, a geospatial division was considered that has a certain correspondence with the ZMG socioeconomic development levels. This way, the decision was made to choose five school centers in each of the four areas in which the city was "divided" strategically: north, south, east and west. Historically the

west and south areas of the ZMG have concentrated the population with the highest socioeconomic level, while the north and east areas have grouped segments with greater marginality. Of course the division is not, nor does it intend to be, strictly linear, but also tendential. In other words, the criterion of the geospatial and socioeconomic association should be assumed with a certain degree of reservation.

These 20 schools were concentrated in groups of five, which are located within the four main areas of the ZMG. To choose randomly each of them, it was taken into account that they were public education primary schools, which were part of the *México Conectado* program, were within the areas selected and that they were of easy access. All of them had morning and afternoon sessions, although the decision was made to inquire exclusively about the situation of the schools that operated in the morning.

A questionnaire was prepared (see Annex Evaluation Format) taking into account the place where the data was collected (Primary School) and the main characteristics of the connection that the Internet networks installed in each school should have, with the aim of finding out how easy it was to connect to the Internet and above all assess the usefulness of the Internet belonging to the *México Conectado* program. The test was conducted on a Smartphone from which an attempt was made to detect, connect and use the WiFi signals belonging to said program.

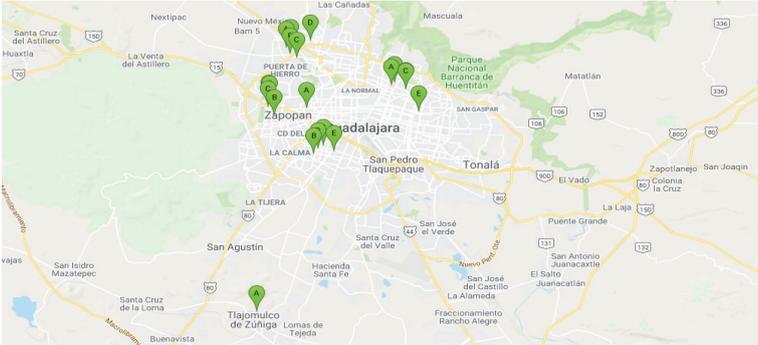
In addition, a request was made in each school to speak with the teachers and principals to enrich the exercise with their observations and impressions about the Internet installed in their schools.

## RESULTS

The following general results were revealed by the exploration that we carried out in the 20 schools, they are simple but solid:

1. The *México Conectado* program provided, at the moment the study was conducted, two types of networks: *MxConectado-I* and *MxConectado-E*. The former network was characterized by being more restricted and dedicated basically to developing administrative

**FIGURE 1**  
**LOCATION OF THE SCHOOLS VISITED IN THE GUADALAJARA METROPOLITAN AREA (ZMG)**



Name and location of the schools visited

*Eastern Area*

- A. Urbana #178 Tomás Escobedo, T/M, Mitla #350 Monumental, Guadalajara, Jalisco
- B. Urbana #217 Ernesto Corona Amador, T/Completo, Montes Urales #2165, Guadalajara, Jalisco
- C. Urbana #782 Juan de la Barrera, T/M, Caliza sin número, San Marcos, Guadalajara, Jalisco
- D. Urbana #156 República de Filipinas, T/M, Nudo de Cempoaltepetl Av. de la Cruz, San Marcos, Guadalajara, Jalisco
- E. Urbana #180 José Clemente Orozco, T/M, Diego Cuentas #788 San Isidro, Guadalajara, Jalisco

*Northern Area*

- A. Urbana #778 Narciso Bassols, T/M, Av. Tesistán #441, La Tuzania, Zapopan, Jalisco
- B. Urbana #779 Mariano Otero, T/V, Av. Tesistán #441, La Tuzania, Zapopan, Jalisco
- C. Reforma de 1857, T/V, Santa Clara #20, Zapopan, Jalisco
- D. Urbana #942 Pedro Sarquis Merrewe, Algeciras #739, Lomas de Zapopan, Jalisco
- E. Ma. Magdalena Vidaurri de Cosío #743, Mezquites #972, La Tuzania, Zapopan, Jalisco

*Southern Area*

- A. Urbana #766 Eugenio Zuñiga, T/M, CP 45640 Sin Nombre N°4, Tlajomulco de Zuñiga, Jalisco
- B. Urbana #902 Ignacio Luis Vallarta, T/M, Isla Salomón #2520, Jardines del Sur, Guadalajara, Jalisco
- C. Urbana #250 Rosario Castellanos, T/M, Isla Aruba Jardines de la Cruz, Guadalajara, Jalisco
- D. Urbana #833 Porfirio Ramón García, T/M, Isla de Hierro #3090, La Cruz, Guadalajara, Jalisco
- E. Urbana #759 Agustín Yañez, T/M, Dos Bocas #1694, 18 de Marzo, Guadalajara, Jalisco

*Western Area*

- A. Urbana #129 y #228 Sara Robert, T/M y T/V, Av. México #3375, Villas San Javier, Guadalajara, Jalisco
- B. Urbana #811 Ignacio Ramos Praslow, T/M, Millet #500, La Estancia, Zapopan, Jalisco
- C. Margarito Ramírez, Tiempo Completo, Santa María del Pueblo, Zapopan, Jalisco
- D. Ignacio B. Pamplona, Constantino Cavafin #6063, Zapopan, Jalisco
- E. Urbana #187, T/M, G. Leroux #228, Lomas de Universidad, Zapopan, Jalisco

Source: Made by the author from the field work conducted on December, 2018.

activities in the schools, while the latter was conceived as a public, open network, whose objectives were of a pedagogical nature.

2. The visit to the 20 educational centers revealed that only in 50 per cent of them it was possible to detect the Internet signal dedicated to the *MxConectado-I* network, the internal network (for administrative activities) and in 60 per cent of the schools, the *MxConectado-E* network was detected, that is, the external or public network (for activities concerning teaching and learning). It is an open network that does not require passwords to access it.
3. But *detecting* does not necessarily mean *working*. In just 15 per cent of the schools in which the *MxConectado-I* network or internal network operates, which demand a password to be granted access, it is possible to actually surf the net, through applications such as Facebook, WhatsApp, YouTube and Google.

What's more, according to the testimonies collected, it is inferred that in view of its instability and scarce functionality, the people responsible or school administrators do not use the network to carry out their administrative work which it is meant to be used for. The school staff claims that only sporadically do they use this network to upload grades or process the students' registrations.

4. Regarding the *MxConectado-E* network, the public, open network which in theory is meant to carry out task of a substantive character, such as teaching-learning activities, the result of the research indicates that only in 35 per cent of the schools it is possible to surf through the applications that are generally used by Internet users. In view of this situation, the testimonies provided by the teachers in charge of using these tools claim that the external network's permanent instability makes it practically impossible to use with educational purposes. In addition, it should be pointed out that a large number of teachers and principals do not know about the existence and function of programs such as @prende and @aprende2.0, which were designed by the federal government to provide didactic and training tools in the use of ICT by teachers.

On the other hand, in those cases in which the external network was detected at the schools visited, the teachers comment that the signal is so weak that it does not reach the classrooms (it should be

considered that the connection equipment or modems are physically located in the administrative areas of the schools).

5. The results of this research indicate that there are no significant differences in terms of connectivity, between the public schools that are in the areas of an alleged lower socioeconomic level (the east and north) of the ZMG and those that are in the most favored areas (the south and west).
6. Still, it is possible to say that, despite the shortcomings in connectivity, it is seeking its own path. In view of the serious connectivity problems existing in the ZMG public schools, resulting from the inefficiency with which the official *México Conectado* program operates, the authorities and the parents' communities have decided to resort to hiring private services with the aim of ensuring connectivity at the schools. This situation is present in 80 per cent of the 20 schools included in the study. In the majority of these schools (9 of 16) it is the parents' associations who bear the expenses of connectivity, while in the rest (7 of 16) it is the authorities, with their own budgets, who have assumed the responsibility of hiring the services externally. In 20 per cent of the schools, connectivity is clearly a chimera.

Surprisingly, in the majority of the cases in which either the parents' associations or the school authorities make efforts to achieve good connectivity (13 of 16 schools) the private contract is made with the company Telmex (owned by Carlos Slim), the same company that is also the service provider for the *México Conectado* program. This seems like a paradox, the federal government pays the private companies for a service that does not work properly and the parents, along with some school administrators, end up paying the same companies that provide the service officially.

7. However, hiring private services for the schools' digital connectivity does not solve the insufficiencies of an educational (pedagogical) nature, since in the majority of these schools private connectivity is aimed at dealing with the schools' administrative tasks (recording grades, registrations and updating the students' rosters, consulting the SEP official information) and only marginally and rarely with curricular tasks. Therefore, the weight of connectivity in primary

education falls on the parents' associations, but its impact on the teaching-learning processes is practically nonexistent.

*CONCLUSION: FROM MÉXICO CONECTADO  
TO INTERNET PARA TODOS, MORE OF THE SAME?*

Government endeavors in Mexico –at the federal and local levels– to expand and ensure connectivity in primary public education, does not only seem to be insufficient, but also, according to inquires such as the present one, tend to cover up reality even in those spaces where it is supposed to be working. The infrastructure of connectivity even in developed context such as the ZMG –the second metropolitan area in the country– is fraught with significant deficiencies, so expecting transcendent results on the subject of “digital literacy” from the formal educational system in the present conditions is unrealistic.

On the other hand, it is necessary to admit that digital connectivity, as part of the infrastructure indispensable for education, is a necessary condition to tackle inequalities in this area of communication and in the gaps existing in the education system. Of course, connectivity is a necessary condition, although it is not enough, to narrow the gap in the so-called information and knowledge society. In addition, as it is well known, many of the differences in which the digital gap is reflected result from prevailing economic and social gaps in the widest context of social conglomerates.

And yet, it is evident that, for over two decades the struggle to eliminate the differentiated access to information technologies has been part of the governments' agenda all over the world, as well as that of international bodies and civil organizations of different kinds. As we have pointed out in the results of this research, in the specific case of Mexico's programs, projects and statements in this sense have been in operation since the beginning of this century but their results are not altogether satisfactory.

With the arrival of a new federal administration, headed by President Andrés Manuel López Obrador, and his self-proclaimed Fourth Transformation, the objective of eliminating the prevailing differences regarding ICT access has been renewed once again. The

banner now carries the name of *Internet para todos* (Internet for All), and it has been placed in the hands of a para-state company dedicated to the production and distribution of electric power, the Comisión Federal de Electricidad (The Federal Electricity Commission, CFE), to meet the needs on the subject of infrastructure, and at the same time it is under the responsibility of the Subsecretaría de Comunicaciones of the Secretaría de Comunicaciones y Transportes (SCT) to deal with the problems of connectivity and accessibility from the view of the “social needs” of “digital inclusion” (SCT, 2019). Nevertheless, the skepticism of scholars and experts in this field regarding the kindnesses of the new digital strategy of the López Obrador administration has not decreased, both in what refers to the goals set in terms of connectivity infrastructure and Internet coverage in regions with greater marginality in the country, very much so despite the emphasis that the Head of the Executive branch has put on the importance of prioritizing the poorest institutions and areas in the national territory (Benítez, 2019; Levy, 2019). The aspiration of the new government’s digital strategy is ambitious, considering what the authorities have declared:

The new democratic participation models, the models for the creation of wealth and the generation of welfare, education, health, financial inclusion, struggle against corruption and the promotion of citizen trust in the government’s performance can only occur by means of the indiscriminate, easy access to telecommunications and broadcast, including Internet broadband (SCT, 2019, p. 7).

Of course, after little more than a year since the beginning of this new administration, the objectives of its national digital strategy remain as a goal to be attained, or in the best case scenario as aspirations, which in the context of an economic crisis of gargantuan proportions like the one resulting from the global COVID-19 pandemic are perceived as difficult to achieve.

In fact, this situation of healthcare crisis revealed many of the difficulties inherited from prior public policies on the subject of digital connectivity. In the specific field of education, schools, teachers, students and parents had to face a reality for which they were not

prepared. The infrastructure and accessibility were showed up in a country where barely 44.3 per cent of the households have a computer, 56 per cent of the households have Internet access, only two thirds of the population claim to have Internet access and more than 50 per cent of the rural population is excluded from connectivity (INEGI, 2019). That is not to mention the deficiencies in teacher and student training to operate in virtual environments, just like the situation demanded. The gaps in connectivity infrastructure compounded the insufficiency in terms of digital literacy. The crisis did not only pose dilemmas for such situation, but also it set up the barriers that are to be overcome in the immediate future scenario, considering that the harshest part of the storm is over.

Either way, if in the spaces of the privileged urban world of digital connectivity in education is depicted by relative or half truths; it is hard to imagine how to overcome the conditions that prevail in spaces of greater social marginality, and in particular in the world of the rural society. The paper we have presented here compels us to think about the importance of inquiring in detail about the reality of digital connectivity in the concrete world, beyond the narrative that generally envelops public policies in the realm of great plans and national agendas.

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## ANNEX. EVALUATION FORMATS

Name of School:

Area:

*Networks detected:*

## 1. MXConectado-I:

Place	It connects	Requests password	Surfs	It gets signal	Children use it
Applications open	Facebook/ Twitter	WhatsApp	YouTube	Google	

## 2. MXConectado-E:

Place	It connects	Requests password	Surfs	It gets signal	Children use it
Applications open	Facebook/ Twitter	WhatsApp	YouTube	Google	

## 3. Their own Internet:

Who pays for it?	Company/ Provider	How old is the Service?	What is it used for?	Children use it

*General observations:*

\*Comments provided by teacher or principal.

*Interview to school staff*

1. How long have you worked in this school?
2. Have you taken any course or training about the use of the Internet in the classroom?
3. Have you taken any course about the @prende2.0 program?
4. Do you know or have you heard about the Digital Inclusion Program?
5. What do you know about the @prende program?
6. What do you think about the Internet use provided by the Government?