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This research wouldn’t have been possible without the support and accompaniment of Nadia Vázquez and Alejandro Medina, founder and director, respectively, of the NGO Escalando Fronteras, which is our major ally on this project, not only for being our gatekeepers in Lomas Modelo Norte, but for guiding us through the research and teaching us a lot about empathy and humility when working with a marginalized community.

Finally, we thank our tutors: Iza María Sánchez, Diana Araiz, Josefina Cortés, Pilar González, Luis Alberto Lozano, Paulina Millán, Consuelo Muttio, and Anabel Rodríguez for guiding, teaching, and supporting us all the way through the realization of this project.

Note: Authors are listed alphabetically with the faculty mentor listed last.
Cover photo: Escalando Fronteras beneficiaries during an activity in Río La Silla State Park (photo courtesy of Patricia De Luna García)
Executive Summary

Children, teenagers, and their families who live outside urban areas in Mexico have been victims of social inequality, political violence, and poor-quality education. Children with cognitive immaturity in marginalized communities are invisible in the country’s public education system. We studied the population of children from the Lomas Modelo neighbourhood who are current beneficiaries of the nongovernmental organization Escalando Fronteras in the city of Monterrey and three other communities, two in the neighbouring state of Coahuila and a third one in Culiacán, Sinaloa.

“Cognitive immaturity” is the term used to designate populations whose individuals presumably live with a cognitive disability but cannot be diagnosed individually due to lack of resources — probably more than half of Mexico’s population can be categorized as such. Although cognitive immaturity is a result of poor-quality education, improvements made in this sector can positively affect a child's cognitive development.
Poverty, Schooling, and Their Relationship

In a recent Facebook Live event known as *Martes del Jaguar,* the governor of the state of Campeche, Layda Sansores, invited a young student with visible cognitive and physical disabilities to serve as a human prop so the governor could pose as a sort of patron of special education. To a captive audience she promised to equip the student’s school with clean classrooms, desks, and restrooms. Although the right to education is the third article in the country’s political constitution, it might be the most ignored one. Governor Sansores was apparently unfamiliar with it and her audience failed to notice how she treated public education as charity.

In Mexico education is a right that every person legally has access to and the state has the obligation to provide quality educational services to guarantee that every individual within its borders can successfully attend their studies in preschool, primary, and secondary education, as well as high school. However, despite being considered a fundamental right for more than a century, education in Mexico still faces significant challenges. For example, the national education system has not yet managed to implement a functional structure that meets the needs of students with different ethnic and socioeconomic backgrounds. It also does not include considerations for students with nonvisible disabilities, that is, cognitive disabilities, since they are not considered disabilities.

Even before the pandemic the centralization of education policies, study programs, and their design negatively affected children’s access to primary and secondary education. In 2020, around 5.7 million children and teenagers between the ages of 3 and 17 were out of school — 17.5 per cent of the population in that age group. The main barrier lies in the lack of adequate spaces for teaching in many schools. Too many times a school is not much more than a room and a blackboard. In the 2019–2020 school year, 14.2 per cent of primary schools, 13.7 per cent of secondary schools, and 15.6 per cent of high schools did not have electricity; 27 per cent of elementary schools did not have drinking water. Similarly, 25 per cent of secondary and high schools lacked drinking water. Adding insult to injury, the COVID-19 pandemic unmasked another big challenge for the public school system: most schools and families lack access to technology.

The percentage of schools that had computers for pedagogical use that year was 48.7 per cent of primary schools, 66.5 per cent of secondary schools, and 69.3 per cent of upper secondary schools. Similarly, Internet service for school purposes was available in less than half of all levels: only 32.8 per cent of primary schools have the service, 43.1 per cent of secondary, and 48.3 per cent of high schools.

Schools also lack full staff with adequately trained teachers. In the 2019–2020 school year, just over a third of the 225,137 basic education schools in the country (from preschool to secondary school) had a complete structure (i.e., a principal, a management or academic deputy director, special education teachers, and a teacher for each grade/school group). In addition, only 78.4 per cent of preschool teachers, 81.1 per cent of primary teachers, 83.3 per cent of secondary teachers, and 95.2 per cent of high school teachers had completed a bachelor’s degree.

The National Education Survey includes among its categories children with a variety of disabilities as well as those with diverse conditions that can negatively affect their performance inside the classroom, such as cultural background.

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1 *Martes del Jaguar* (Episode 35) [TV series episode], 2022.
or language and social skills. Children who are considered to have a worse academic performance than their peers are given education in “attention centres” and service units. During the 2019–2020 school cycle there were a total of 648,101 students in basic education with special needs. They were served by 1,669 attention centres that work as basic education schools, and 4,646 service units — that provide training for special education teachers.

In 2020, approximately 2.3 million children and young people were in a situation of vulnerability as a result of the absence of basic conditions for their well-being, making education a less attainable right for vulnerable groups such as Indigenous speakers, people with disabilities, and the population living in poverty. That year, 64.3 per cent of people between the ages of 20 and 24 living in vulnerability had at least completed secondary education, and an even smaller percentage had at least finished high school education (31.4%). By contrast, 89.1 per cent, and 59.8 per cent of the population with higher income, had successfully finished both secondary and high school respectively.

Among all the statistics there is a notable absence of clear and explicit information about students with cognitive disabilities. Most notable is the lack of a government report on the effects of the pandemic, not only on this population but on education in general.

### Escalando Fronteras: Climbing to Prevent Other Risks

Escalando Fronteras is a local nongovernmental organization (NGO) focused on the prevention of at-risk behaviour in children living in vulnerability through sports and climbing in La Huasteca National Park. We worked with the NGO as part of an immersive community experience designed by Tec de Monterrey called Semestre i that aims to inspire more socially aware alumni. The NGO also seeks to include other actors, such as families and schools, as their allies in prevention.

In conversations with Nadia Vázquez and Alejandro Mendoza, director and president of Escalando

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**Figure 1. Problem tree (Credit: CIMA)**
Fronteras, we learned how the community they work with is among the most vulnerable neighbourhoods of the Monterey Metropolitan Area. While the community faces myriad problems, substance abuse and learning disabilities were the most prevalent. Since 2015 the organization has built a close relationship with the community and now organizes regular workshops about responsible parenting and related topics with the assistance of other local NGOs.

Figure 1 corresponds to a diagnostic tool employed during the early stages of our involvement in the community of Lomas Modelo. The tool identifies a central problem (the tree trunk), the causes that trigger the problem (the tree's roots), and then the effects of the central problem (the leaves and branches of the tree-like figure). Bullying, rigid gender roles, discrimination, and hardships surfaced as obstacles in access to education.

Three years ago a group of psychology master’s degree students investigated cognitive delay with Escalando Fronteras’s beneficiaries — at the time around 40 children and teenagers aged 4 to 17. Among their findings was the widespread diagnosis of cognitive disability in almost all the NGO’s beneficiaries in varying degrees. This diagnosis triggered the classification of the Lomas Modelo community as cognitively immature,4 which means that because of the community’s social and economic background, their members might experience difficulty when performing social and academic tasks. In this community it becomes evident which community members have a cognitive disability by their speech and critical thinking. For example, they might have difficulties when asked to elaborate on an anecdote or communicate an instruction.

Escalando Fronteras wanted to aid the children’s cognitive development. With the assistance of María Lourdes Francke Ramm, a child psychologist, and a Project Adventure facilitator,5 Juan José Cervantes Castillo, we developed a handbook that contains a series of games, icebreaker activities, and cool-down activities specifically designed to aid the children’s cognitive development and the organization’s goal. The variety of activities focus on improving the children’s self-esteem, communication skills, critical thinking, and the development of a life plan.

A Handbook for Resilience

As Escalando Fronteras began using the handbook, we regularly visited residents to monitor whether and how children accepted the handbook and whether their parents perceived any changes in their behaviour. Although the relationship between the community’s parents and the local school teachers was cordial, there had been incidents of discrimination and bullying by a particular teacher and it was unclear what measures had been taken by these institutions, if any, to aid the children’s cognitive immaturity.6

According to the experts’ own accounts, to improve the cognitive development of children a holistic approach is needed, meaning a collective effort between their families and school. Escalando Fronteras provides the children with an extracurricular activity. Although it has a significant impact on the prevention of substance abuse.

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4 Access to the published investigation was not provided for the case study.
5 Project Adventure is a methodology used by organizations in the United States to help children and teenagers build back their confidence after traumatic experiences. It consists of an ice-breaker activity, a high-performance activity — such as hiking, rappelling, or climbing — a game or activity related to whatever skill they want to be developed, and a cool-down activity designed for reflection.
6 The incident was discussed in a conversation with Nadia Vázquez, founder and president of Escalando Fronteras, as an isolated incident that led to the teacher’s immediate dismissal.
abuse, the organization needs the help of parents and teachers to positively impact cognitive immaturity in the community.

While education is supposedly a public service, its main actors are often secretive and most teachers or public servants we spoke to asked not to be identified. For example, a teacher who used to be part of the Special Education System in Nuevo León told us that the term cognitive disability is not identified by the education ministry and there are no official numbers that identify children with this disability, even though the ministry recognizes that some children experience more difficulty than others when learning in the classroom.

For a child to be considered under this category, the student has “to present a significantly different performance from that of their classmates requiring for them to be incorporated into a learning process with a variety of resources to aid in their participation and learning to reach the purpose of education.”

This approach is completely insufficient in communities like Lomas Modelo where living conditions make it almost impossible for children to reach an optimal cognitive development. Aside from poor-quality education, long shifts and informal jobs deprive their parents from giving their children the time and care they need, obligating older siblings to parent the younger ones. Living under the poverty line deprives them of a balanced and complete diet for their age and the need for extra income obliges them to start looking for a job long before they reach the legal age to start working part time. Learning disabilities only increase the vulnerable conditions the children already live in. The approach also does not translate into enforceable public policy that allows teachers to identify these difficulties and channel the students struggling with them to obtain the resources they need.

A state attorney for Child Protective Services in Nuevo León, Alejandro Morton, described how problems detected in Lomas Modelo were not new. “Lomas Modelo is a vulnerable area, yes, but there are other neighbourhoods in a much more vulnerable state, not only in Monterrey, but all along the country there are more violent neighbourhoods — poorer, with a bigger substance abuse problem. In those places we can expect more troubling results.”

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**Hard to Reach: The Illusion of Prosperity Narratives**

The communities we selected for this case study are in three different states in northern Mexico, all of them with thriving economies reliant on industrial agriculture and urban development. They all have different origins and unique situations that mark their day-to-day life and difficulties but inequalities that involve poverty and marginalization remain the same.

Lomas Modelo Norte in the core of the Monterrey Metropolitan Area in the northern state of Nuevo León was the first neighbourhood we planned to consider. The other two included a marginalized elementary school in Saltillo and one in La Luz, a former agricultural community trapped in the urban development of the La Laguna Metropolitan Area, both in the neighbouring state of Coahuila. A school dedicated to educating seasonal workers’ children in Culiacán in the coastal state of Sinaloa was the other community chosen for this case study.

The communities were familiar to us since we have all been involved in community

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development programs and other NGO initiatives in our home states. They are communities we worked with in the past and they were enthusiastic about our investigation. How did these communities become such an adverse environment for children and how can a country that praises itself for its public education disregard the testimonies of day-to-day struggling parents, teachers, and students? The answers to these questions can be found in their history and the impact that public policies have in their development.

Four Communities, Many Stories

Lomas Modelo Norte was established between 1980 and 1990 by a group of Otomí Indigenous people in an irregular settlement. A generation after their migration from the Central Mexico lowlands commonly known as the Bajío, their descendants still face numerous challenges and harsh living conditions. Living in irregular settlements makes them invisible to local government officials and blocks them from their civil rights.

La Luz, on the other hand, was created as part of the postrevolutionary governmental efforts to settle former guerrilla members in communal farms known as ejidos that were essential for the import substitution industrialization policy implemented by the Cárdenas regime between 1930 and 1940. The municipality secretary, Gilberto López Estrello — a former teacher himself — described its history. He said that the communal farms were effectively dismantled when NAFTA was signed into effect in favour of a free market economy. Most of them have become municipalities of their own or been incorporated into bigger cities, leaving their inhabitants to either sell their lands to realtors or fiercely resist their attempts, as La Luz has.

San Ángel, by contrast, is a neighbourhood made up of those displaced by the economic and urban development of Saltillo, Coahuila’s state capital. Located in the outskirts of the city, it lacks public infrastructure and state-provided services, despite not being an irregular settlement.

The community we studied in Sinaloa is also located in the outskirts of the state capital, Culiacán. It is home to seasonal workers and their families who migrate annually from the southern states of Guerrero and Oaxaca and is located among the fields of major agricultural producers like Herdez, a mayor produce company in Mexico.

Approximately 20 years ago in Sinaloa, children would work with their parents from dawn to dusk in the field, but in the last 12 years, agreements were made between the producers and the

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8 This was an economic policy aiming to promote the country’s industrialization while limiting the import of a series of products and incrementally making public investment for national production of goods and service.
school district to make school attendance mandatory so that the parents can work. Since then, the community has faced numerous challenges to ensure their access to education. Although each community has different origins, they have all been created — either spontaneously or bureaucratically planned — with the purpose of filling the gaps in national policies and development.

A teacher in San Ángel told us “My students don’t have the basic tools to go to school. I cannot demand for them to pay attention and pass a test when I know they didn’t have breakfast this morning.” Two of the communities we encountered were part of a federal program against infant malnutrition called Escuelas de Tiempo Completo (full-time schools) that ensured that every child could at least have a proper meal each day. However, since the pandemic hit the country and online learning became mandatory, the federal government essentially cancelled the program. Even though such full-time schools were not a long-term solution for reducing the rates of cognitive disabilities among children growing up in vulnerable conditions, losing the meal program further imperils children’s healthy development. As Alberoni Cortines, the principal of the Miguel Hidalgo Elementary School in La Luz, explained “Before the pandemic, children would arrive by eight o’clock in the morning and leave around four o’clock in the afternoon, after having lunch and without homework to do. But now we have divided the school day so we have half the students from eight to noon and the other half from noon to four.”

Fernando Santillán, a psychologist familiar with Lomas Modelo, attributes the various causes of children’s cognitive immaturity to a series of omissions in public policy. “The thing is parents cannot be at fault for this situation. When you have a child as a 14- or 15-year-old you simply don’t have the tools to raise them and, because you most certainly do not have access to contraceptive methods or [sex-ed] information, within a few years teenagers can find themselves forming big families in which the elder siblings have to contribute in the upbringing of the youngest.”

Teachers and parents recognize a substance-abuse problem in their communities, but not the kind tackled by the federal anti-drug campaign started almost 20 years ago. Toluene — a solvent used in construction and carpentry jobs — is widely used in Lomas Modelo because of its low cost and because its effects allow users to work beyond the point of exhaustion. It takes away hunger and desensitizes them to freezing...
temperatures. Exposure to this substance has been linked to poor cognitive development but the solvent is not recognized in the anti-drug campaign which does not concern itself with the health of vulnerable populations.

Poverty and Cognitive Development

After our interviews, it became clear that poverty is directly linked to non-ideal cognitive development. Considering that 55.7 million Mexicans live in poverty, by the government’s own numbers, that means around half of the population lives in a vulnerable condition.9 Especially during the COVID-19 pandemic, families in vulnerable conditions had to tighten their belts to be able to afford having their children at home and in need of devices and Internet access to continue studying.

The mother of an Escalando Fronteras beneficiary told us, under condition of anonymity, “For me the most complicated thing was to divide my focus. I have two children, one of them in first grade (elementary) and the other one still in kindergarten. Both of them start classes at eight in the morning, but we could only afford to buy one phone so I decided that my eldest son’s education was more important.” She described how her youngest son, a joyful four-year-old boy at the time of the interview, had difficulties to recognize numbers and letters. (He was two years old when the pandemic hit the country.)

As she organized her students’ notebooks, a teacher in La Luz told us, “During the lockdown I couldn’t get near my students but I designed workbooks for them and their parents to continue with the school program at home. I would deliver them door by door … I knew my students didn’t have Internet access … I had to do it out of pocket but I understand that most parents didn’t have the time to help their children with the workbook … Most of them don’t have a high school diploma.” When asked about the students returning to school after almost two years of learning online she was reluctant and recognized that students had “unlearned” basic social abilities, especially those linked to critical thinking and communication.

Schools have a fundamental role in children’s development but changing a study program or increasing the number of hours students spend at school is not going to address developmental problems linked to poverty. Every single actor in government and civil society needs to be involved in addressing an epidemic that potentially affects every Mexican child living in poverty.

Impact and Barriers to Success

The communities we studied are marginalized and vulnerable. Because they’re located on the outskirts of cities, access to them is difficult because of distance, transportation, and security issues. Escalando Fronteras’s impact in Lomas Modelo has been vital for better development in the children, even more so since they were designated as cognitively immature, and the diagnosis triggered a series of initiatives like ours. Tools to professionalize their services, like our handbook, certainly help maximize their impact in the community.

Unlike La Luz, for example, where only the Catholic organization Caritas and some groups of Jesuit and Claretian missionaries have made attempts to participate in the community, Lomas Modelo counts on the solid support of NGOs that work around the clock alongside universities, like Tec, looking for ways to help improve the community. The issue of education is a common problem

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9 Medición de la Pobreza (Mexico City: CONEVAL, 2022).
that communities or neighbourhoods on the periphery of urban areas face, but the causes go beyond education. Traditionally, Mexican children have learned through repetition of concepts and dynamics by state-trained teachers who are often outsiders, but this pedagogy might not be ideal when tackling such complex challenges. A child's cognitive development is not only dependent on the teacher's ability in their job. It also depends on their context and the conditions of their upbringing. It is not enough to send out teachers to every corner of the country — proper conditions need to be created for a dignified childhood.

**Lessons Learned**

Mexico is failing its children's families. Declaring education a right does not mean equal access to it. Knowing your rights does not give you the opportunity to claim them and human dignity does not apply to you if you live below the poverty line, come from an Indigenous background, or live in a rural area. Education is one of 29 fundamental rights established by the Mexican constitution, and perhaps the only one that every government has failed to support. Even though Mexico has made significant progress in the coverage of educational services, there are still obstacles associated with the social and economic context that affects these policies' effectiveness.

Initiatives like Escalando Fronteras's handbook can help improve the cognitive immaturity of children but without the support of the Mexican government, any initiative from local NGOs will not solve a national problem. Escalando Fronteras is a brave and unique effort to better Monterrey's children's education. Their founders do everything in their power to obtain resources for their NGO, to create alliances, and include families and schools in their efforts, but their scope is limited.

In Mexico, being vulnerable makes you invisible to policymakers. That is why children with learning disabilities are not part of any public education policy and many communities have gone unnoticed for decades. A bitter atmosphere of despair permeates the communities as existing special education programs crumble during a nationwide crisis. Perhaps society will have braver citizens and a responsible government in the future — one that does not applaud when a governor patronizes a special needs student on Facebook Live. In the meantime, we will continue to do everything in our power to support initiatives like Escalando Fronteras until every Mexican child has unlimited and unconditional access to education — until dignity becomes a habit.

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Research Team

Allan Ríos is working on a bachelor’s degree in social transformation at the Tecnológico de Monterrey, Campus Monterrey. While he has collaborated on different social projects, his role as coordinator of the “Pal Sur del Norte” volunteer work stands out. The project sought community development through education, entrepreneurship, water management, and social cohesion. He was also the administrative and finance director of the Society of Social Transformation Students.

Fátima Casas is an undergraduate student in social transformation at the Tecnológico de Monterrey, Campus Monterrey. She recently worked creating social projects with agro-peasant communities, NGOs, and artisan communities along with the Social Innovation Center at Tec de Monterrey in San Cristobal de las Casas, Chiapas, Mexico. She earned a diploma in responsibility and social entrepreneurship at the Central University of Chile and has studied leadership for social development and political studies. Throughout university, she has been a member of the Society of Students in Social Transformation, first in the position of social responsibility and later as president.

Mariana Caamal is working on her undergraduate degree in industrial design at the Tecnológico de Monterrey, Campus Puebla. She is part of the Líderes del Mañana program. Concentrating on design for social innovation, she recently worked with an artisan family in Villa Progreso, a rural community in the state of Querétaro. She is currently an intern in social formation at the Tecnológico de Monterrey, Campus Puebla.

Patricia de Luna is a bachelor’s student in social transformation with a concentration in global issues. She is a member of the social communication network for the Congregation of Missionaries, Sons of the Immaculate Heart of the Blessed Virgin Mary. She has collaborated in the development of social projects for the Neighbours Association of the Narvarte neighborhood in the city of Monterrey, N.L., as well as the Álica Biosphere Foundation and has collected data for the business management consultant firm Prohibition Partners.

Iza Maria Sanchez Siller is a professor at the School of Social Sciences and Government at Tecnológico de Monterrey. She graduated in law from the Tecnológico de Monterrey and holds a PhD in social sciences, with a specialization in migration and public health, having completed research stays at Mississippi State University and University of Trento in Italy. In recent years, she has taught courses on citizenship and democracy, sociology, gender, society and human rights, political participation and sociology of identity, and qualitative research methods and has coordinated the semester of “Leadership for Social Development.” Her current work on social development focuses on gender and violence from a sociological and legal perspective, especially with domestic migrants, through projects with Indigenous communities within the Monterrey Metropolitan Area. Sánchez Siller is co-founder of the program “Promoting Gender Equity in Adolescents and Young Women in Rural Areas” in Mitunguu, Kenya (a program that works with local high schools to reinforce the importance of higher education and decision making).
The Reach Alliance began in 2015 at the University of Toronto as the Reach Project, a student-led, faculty-mentored, multidisciplinary research initiative. The Reach Alliance has since scaled to include the University of Oxford’s Saïd Business School and Blavatnik School of Government, the University College London, and Tecnológico de Monterrey. Reach’s unique approach uncovers how and why certain programs are successful (or not) in getting to some of the world’s hardest-to-reach populations. Research teams, comprised of top students and faculty from across disciplines, spend twelve months investigating each case study. Once the data collection process is complete, teams write case reports that are published and disseminated across the Reach Alliance’s diverse network of policymakers, practitioners, academics, and business leaders.

Inspired by the United Nations’ call to eliminate global poverty by 2030 as part of a set of Sustainable Development Goals (SDGs), our mission is to pursue the full achievement of the SDGs by equipping and empowering the next generation of global leaders to create knowledge and inspire action on reaching the hardest to reach.