

Digital education

in Latin America:

Challenges and tools

for vulnerable students



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# Digital education in Latin America: Challenges and tools for vulnerable students



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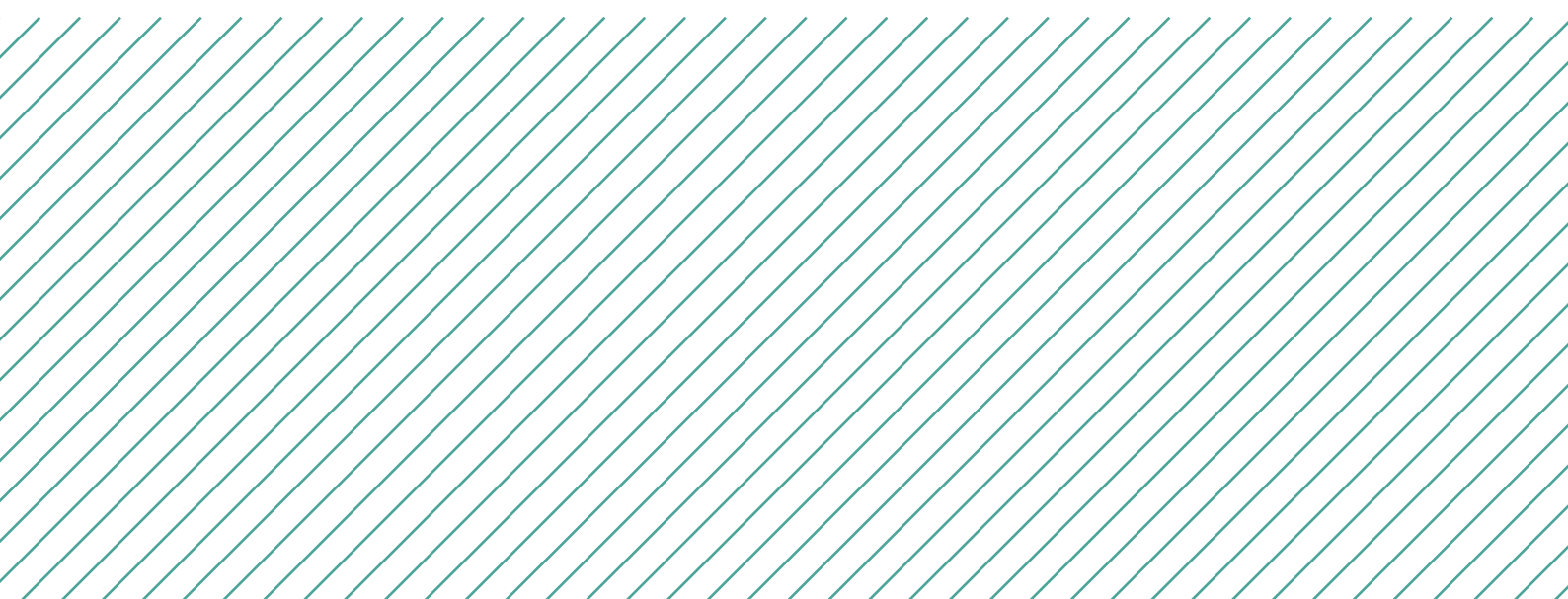
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# Foreword

María Florencia Ripani, Director, Ceibal Foundation, Uruguay

The crisis caused by the COVID pandemic has resulted in one of the greatest social disruptions in the past one hundred years, with dramatic consequences. Latin America and the Caribbean is the region most vulnerable to COVID-19 and with the largest number of deaths in the world, which exerts profound and unequal social and labour effects related to structural problems of inequality, poverty and vulnerability (ECLAC, 2022). Most of the countries in the region did not have the technological infrastructure and capacities to rise to a challenge of this nature with equitable and inclusive solutions: students from vulnerable sectors had less access to education as a result of the profound inequality that the region is experiencing, leading to wider gaps and a negative impact on learning and school dropout rates (Ripani, 2022; ECLAC, 2022; ECLAC/UNICEF, 2020).

School closures, which affected more than 170 million students throughout the region, will have an impact on the “learning poverty” indicator - which brings together reading and schooling indicators -, which at the end of primary education could increase by over 20 percent, amounting to an estimated total of 7.6 million additional “learning-poor” children in the region (World Bank 2021). These learning losses will be reflected mainly among the more disadvantaged students, in particular the lower-income groups who were already learning very little even before the pandemic, including children and young people from populations historically facing situations of greater vulnerability, such as rural communities, people of indigenous and African descent, migrants, women and people with disabilities.

Although the countries in the region are faced with a complex, unprecedented education scenario, this is also an opportunity to look ahead and envisage a more effective, equitable and resilient education system capable of facing both foreseeable and emerging challenges. Rising to this challenge in contexts of scarcity calls for a great capacity for innovation in order to promote the repurposing and adaptation of resources, and the creation and development of new strategies promoting well-being and learning.

In the context of the Alliance for the Digitalization of Latin America (ADELA) project, funded by IDRC Canada, the Ceibal Foundation presents in this publication an analysis of situations of vulnerability, poverty and unequal access to technological resources affecting education quality, equity and inclusion, as well as a Toolkit for addressing situations of vulnerability among the student population at an early stage.

With this paper, Uruguay's Ceibal Foundation is stepping up its efforts to promote research, innovation and dissemination projects on technology and education for the purpose of furthering analysis, reflection and the creation of better opportunities for social inclusion and learning in the region.



## Introduction

COVID-19 has affected the face-to-face education of more than 114 million school-age children in Latin America. School closures in the region have been the longest globally (World Bank, 2021). While in the period between March 11, 2020 and February 2, 2021, the world's schools had been closed for an estimated 95 class days, closures in Latin America averaged 158 days, more than in regions such as South Asia, where, in the same period, schools were closed for 146 days.

Only students who have been able to access a guaranteed internet connection at home -or somewhere else- have been able to continue their studies through transmedia environments and alternation schemes. In Latin America, 43% of primary schools and less than 62% of secondary schools had internet access for teaching purposes before COVID-19 (World Bank, 2021). This suggests that for students with limited access to devices and internet connection, education mediated by ICTs (Information and Communication Technologies) during the pandemic may have been like a hurdle race rather than an inclusive mechanism for continuing with their teaching and learning processes. In Latin America, the new education scenario resulting from COVID-19 – marked by heavy dependence on ICT access and use – poses a paradox: just as it has allowed millions of students in the region to continue their school studies, it has also been one of the scenarios in which the education gaps in the region have been largest and most evident, especially among groups in situations of vulnerability.

The purpose of this document is to put into perspective the challenges that students have been faced with -particularly girls and female adolescents exposed to situations of vulnerability- in order to adapt to the new modalities that have facilitated the continuity of education cycles during the COVID pandemic. It also seeks to offer practical solutions, including an assessment and monitoring mechanism for policy makers, school leaders and teachers in order to help stop and reverse the adverse impacts of the pandemic in terms of the learning losses of children who, due to limited access to electronic devices and poor internet connectivity in their homes, are faced with situations of vulnerability.



How does vulnerability manifest itself in ICT-mediated education during the COVID-19 pandemic?



## How does vulnerability manifest itself in ICT-mediated education during the COVID-19 pandemic?

Although no official definition of vulnerability by any multilateral organization or authority can be identified, there are predictors that can help define it. A suitable proxy is usually the Multidimensional Poverty Index -MPI-, which goes beyond an income-based measurement of poverty and encompasses five dimensions: 1) Education; 2) Housing; 3) Job and Social Security; 4) Health, Basic Services and Food Security; 5) Habitat Quality (OPHI, n.d.). Some of the indicators that make up the IMP are disrupted or curtailed schooling, the educational level of the adult members of the household, lack of access to health services, basic services (drinking water, electricity, sanitation), food security, unemployment or job insecurity of the adults living in the household, among others.

The above therefore suggests that vulnerability has multiple dimensions that manifest themselves in populations that are not homogeneous in their observable and non-observable characteristics or in their experiences, so the interaction of them, which include, but are not limited to, age, sex, sexual orientation, gender identity, ethnicity, socioeconomic status, head and makeup of the household, existence of one or more members in a situation of disability, geographic location (urban/marginal urban/rural), immigration status, the existence of victimization occurring in the context of armed conflicts and displacement, physical and/or psychological violence, domestic abuse, among others, can increase deprivation and drive certain communities and individuals to marginalization (Kuran et al., 2020). At the experience level, for instance, one of the situations of greatest child vulnerability resulting from COVID-19 has been the large number of children who, as a result of the death of some of their main caregivers, have been deprived of the necessary care that would ensure their best emotional and educational development. The situation is so dramatic that, according to a recent study by The Lancet, for every two people who die due to COVID-19, one child is orphaned by the death of a parent or grandparent who took





care of them and lived in their home (Hillis et al., 2021). According to World Bank estimates, nearly 2 million children under the age of 18 could be in this situation and at risk of being orphaned (Rawlings & Hillis, 2021).

The intersectionality between the characteristics and experiences mentioned above can increase the degree of vulnerability at the individual or community level in certain groups of children and adolescents during the COVID-19 pandemic. In fact, multidimensional poverty, used as a frame of reference in the definition of vulnerability for this document, has a higher incidence among children than among the total population. In Latin America and the Caribbean, approximately one in ten children lives in a household in severe multidimensional poverty (OPHI, 2018). Therefore, in order to stop the vulnerability they are exposed to from reproducing inequality in ICT-mediated education during the COVID-19 pandemic, it is necessary to develop resilient education structures with robust and diverse warning and response systems suited to the needs of the population groups facing these situations.



# 2.



Main challenges  
to ICT-mediated  
education among  
students in situations  
of vulnerability

# Main challenges to ICT-mediated education among students in situations of vulnerability

In May 2020, the Inter-American Development Bank (IDB) warned that long school closures would have negative effects on the learning achieved, timely schooling, dropout rates and graduation. It also stressed that the worst affected and most at risk of being excluded from the system would be poor and vulnerable middle-class, indigenous, migrant and special-needs students. The publication also warned that the situation could worsen, with the risk of increasing the gaps that already existed before COVID-19 if the education systems lacked the necessary mechanisms and conditions for distance learning in accordance with the characteristics and needs of households, especially the most vulnerable (Álvarez Marinelli et al., 2020).

As updated statistics on multidimensional poverty <sup>[1]</sup> have been published in some Latin American countries in 2021, the warnings in the IDB report have been coming true. Almost two years into the pandemic, and despite the efforts of governments in Latin America to maintain educational services through online platforms, the distribution of digital content, physical and printed material, active use of social networks and instant messaging, TV and/or radio, many of these tools have not reached the most vulnerable students yet. Consequently, limited access to ICT devices and resources and low connectivity in rural and marginal urban areas have been a harmful combination for the most vulnerable students during the pandemic. This situation, among others, poses the main challenges to ICT-mediated education. Some of them are described below.

## Limited access to ICT devices and resources

Before COVID-19, access to digital devices, resources and content was a privilege that few students from vulnerable populations in Latin America could have. The outbreak of the pandemic did not only make this reality more apparent, but it also magnified it and, in the long run, it might increase the digital divide between children and adolescents who do not have barriers to digital media access for digital education and those who do.

Developments in connectivity infrastructure and the education and digital inclusion programmes that governments in the region have been implementing for a few decades (Martínez-Restrepo et al., 2018) have not been enough to mitigate the effects of COVID-19

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<sup>[1]</sup> Multidimensional poverty includes different deprivations affecting poor people in their daily lives, such as lack of education, poor quality of work, threats of violence, among others. This is measured on the basis of different indicators that can capture the complexity of the phenomenon. The indicators are set depending on the country context in order to reflect needs and priorities (OPHI, n.d.).



on unequal access to digital devices and resources. Compared to the regional average (77%), in Latin America, only 45% of students in the bottom income quintile have internet connectivity at home through electronic devices or mobile phones. In countries such as Peru, Mexico and Colombia, low-income students are in a more precarious situation, as only 14%, 19% and 25% of students in these countries enjoy internet connectivity at home (World Bank, 2021). Although data on access to ICT resources disaggregated by race, ethnicity, immigration status, rurality or urbanity, among others, are scarce in the region, the available data suggest an even more pronounced digital divide in the interaction of these variables.

### **Low connectivity in rural and marginal urban areas**

Since the beginning of the pandemic, persistent gaps have been apparent in connectivity infrastructure at the rural level. According to the International Telecommunication Union (2020), the rural-urban gap in the use of mobile internet remained above 24 percentage points (pp) for the Latin American average during 2019. Differences were also observed in internet connection speed, which, depending on the geographical features, may or may not be more limited.



Taking as a benchmark the multidimensional poverty figures <sup>[2]</sup> recently published by the National Administrative Department of Statistics (Spanish acronym: DANE) of Colombia, one of the leading statistical offices in Latin America, it is safe to say that, during COVID-19, lower-income households in rural and marginal urban areas have been the worst hit by the negative economic effects of the pandemic. This situation is increasingly adverse if the households are located in rural or marginal urban areas, if they are headed by women, if they self-identify as indigenous, or where there is at least one Venezuelan migrant. For instance, by 2020, 50% of the people from a household whose head self-identified as indigenous were multidimensionally poor. Similarly, 44% of households with at least one migrant member from Venezuela were multidimensionally poor.

Returning to the multidimensional poverty figures, DANE also showed that the shock caused by COVID-19 was more adverse at the educational level in territories with limited or no internet connectivity. In rural areas, for instance, school absenteeism went from 4.8% in 2019 to 30.1% in 2020; that is, an increase of 25.3 percentage points in one year (DANE, 2021). In this context, students with limited access to ICT devices and resources and low connectivity in rural and marginal urban areas have not only been more liable to higher levels of school absenteeism and learning lag, but they have also been pushed to higher levels of multidimensional poverty as a result of the low digital inclusion that they had been experiencing before COVID-19.

## Gaps in the mainstreaming of ICTs into pedagogy

The outbreak of COVID-19 led to Educational Institutions (EI) in Latin America -with the exception of Nicaragua- closing their establishments and promoting emergency remote learning. However, the number of devices per student was not enough for each child to take one home. In fact, according to data from the Ministries of Education of Colombia, Chile and Mexico, for the years prior to COVID-19, the average number of students per computer was eight in the first, ten in the second, and nine in the third (World Bank, 2021). Furthermore, only 67.4% of the school leaders of Latin American Educational Institutions believed that their teachers had the necessary skills to mainstream digital devices into teaching processes (OECD, 2018).

Regarding teacher perception of mainstreaming digital devices into the classroom, in 2018, before COVID-19, less than 20% of the principals of EIs in Latin American countries that participated in the PISA - OECD surveys felt that their teachers had the necessary skills to mainstream digital devices into their teaching practice. Additionally, less than 20% of school leaders strongly agreed with the assumption that teachers had enough time to adapt their content by using digital devices. This situation was more noticeable in public than in private EIs, and in rural than in urban EIs (Barria, 2020; Duque Vergara, 2020).

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<sup>[2]</sup> The multidimensional poverty index in Colombia is measured taking account of conditions of education, childhood and youth conditions, work, health, public utilities and housing (DANE, 2021).

## Gender differences in the use of ICTs for teaching and learning

According to the study *Gender and COVID in digital education and STEM in Latin America*, prepared by the Ceibal Foundation and CoreWoman (2021), intensive use of ICTs during the pandemic inevitably implies addressing gender gaps. The study found that, although no differences were reported between boys and girls in terms of access to devices in Latin America, the evidence did show gender gaps in the strategic use of ICTs among students. A pilot of instruments to understand the possible biases in the use of ICTs in teachers and students of 5th and 9th grade in Colombia found statistically significant differences in this aspect. While the girls reported using ICTs to develop communication and social skills, which is reflected in more intensive use of social networks, the boys reported using ICTs for gaming on digital platforms (Martínez-Restrepo et al., 2018).

The gender gaps in the use of ICTs are rooted in the socialization processes whereby girls grow up practising empathy, while boys develop comprehension and construction systems. Over time, such socialization not only affects the self-confidence of girls and female adolescents in developing STEM (Science, Technology, Engineering, and Mathematics) and 21st century skills<sup>[3]</sup> and ICT-mediated learning, but also their decisions on developing a career plan in STEM areas (Ceibal Foundation and CoreWoman, 2021). It is for this reason, among others, that when they reach adulthood, the number of women working in industries related to science, technology and innovation falls off.

## Low levels of digital inclusion in the most vulnerable households

Low digital inclusion (access to devices and connectivity via the internet) in some households in Latin America before COVID-19 limited the immediate response capacity for an easy transition to online education, especially for children and adolescents from low-income households and those located in rural or marginal urban areas. According to OECD-PISA figures, only 80.6% of students in Latin America had access to a computer or tablet (OECD, 2018). The situation was more critical for female-headed, single-parent households compared to biparental households. In Colombia, for example, 52.3% of them had no internet service (GEIH survey, 2020).

<sup>[3]</sup> STEM and 21st century skills are known as a set of skills that include critical thinking, problem solving, creative thinking, interpretation and analysis of information, emotional intelligence, cognitive flexibility, and adaptation to change. These skills are necessary for personal and career development in the labour market of the 21st century (Martínez-Restrepo, et al., 2018).





Low digital inclusion during COVID-19 has affected the education of children living in low-income households, who have also been more vulnerable to extreme weather events. This is known to be the case in Honduras, where school dropout has been associated with the lack of technological and economic means for sustainable ICT-mediated education, not only in the context of COVID-19 but also due to the effects of hurricanes Eta and Iota on infrastructure in November 2020. Before COVID-19, 72% of people in urban areas of Honduras had a computer, and an additional 13% – that is, 85% – had internet access. However, only 52% of people living in rural areas had a computer, while 70% had internet access; that is, 15% less compared to urban areas (Alas Solís et al., 2020). In view of the school dropout that has affected the most vulnerable households with low levels of digital inclusion, and to avoid future dropouts associated with the same reason, it is important that teachers should be able to monitor the students' experience with the shared digital material, and thus identify any possible decrease in the quality of education due to a lack of familiarity with the platforms and/or difficulties in navigating the digital resources.

The low levels of digital inclusion in the more vulnerable households are the result of not only the scarcity of devices, digital resources and connectivity but also the limited development of the digital skills of parents and/or caregivers, whose role is especially significant when teacher presence is limited. According to a study by Livingstone and Zhang (2021), the higher the level of schooling of the parents or caregivers, the greater the children's digital resource management skills, since the more intensive the use, the more likely the students





are to use a wider range, which gives them more autonomy, confidence and control over their ICT skills. However, due to other factors associated with the multidimensional poverty of households, such as unemployment, low levels of education for adults, housing conditions, exposure to child abuse, criminality, and domestic violence, among others, children living in these households are unlikely to have received timely support from their parents/caregivers, which makes them more liable to school absenteeism and learning lag, as has been the case in some Latin American countries during the pandemic.

## Learning losses

One of the most challenging aspects associated with limited access to digital resources and connectivity in the short, medium and long term is the educational losses threatening the populations most exposed to situations of vulnerability. According to the World Bank, learning poverty <sup>[4]</sup> in Latin America could increase from 51% to 62.5% between 2021 and 2022, amounting to 7.6 million additional children compared to 2019. In addition to being a collective tragedy, this situation would also affect the fourth Sustainable Development Goal (SDG), which seeks to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” by 2030.

In 2020, *Save the Children* conducted a global survey in 44 countries to measure the impact of COVID-19 on children. In El Salvador, 7 out of 10 children feel that they have learned little or nothing in the context of the remote modality during the pandemic. Some of the main obstacles cited by the students are the difficulty in understanding the assignments, limited internet access and lack of access to didactic resources. Of those surveyed, 36% of children stated they do not believe they will go back to school, or do not know whether they will (Save the Children, 2020).

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<sup>[4]</sup> Learning poverty is understood as the proportion of children who are unable to read and understand a basic text by the end of primary school.





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## Other vulnerability factors increasing the gaps for ICT-mediated learning among students

The vulnerability scenarios girls and female adolescents have been exposed to are not only associated with poor training in the use of ICTs for learning but also school dropout due to teenage pregnancy and domestic work, among others. Regarding the former, previous health crises, such as that resulting from the Ebola epidemic between 2014 and 2015, showed that school shutdowns contributed to an increase in teenage pregnancies and school dropout rates (World Bank, 2020). Although the effects of COVID-19 on this matter in Latin America are unknown, the possibility cannot be ruled out. With regard to domestic work, the evidence indicates that, during the pandemic, girls and female adolescents have been overloaded with domestic work, caring for younger siblings and sick relatives (Save the Children, 2020), which has disrupted their ICT-mediated distance learning environments.









Pedagogical best practices implemented to meet the needs of students facing situations of vulnerability

## Pedagogical best practices implemented to meet the needs of students facing situations of vulnerability

In Uruguay, 85% of the total student population has benefited from the availability of digital platforms and other services related to the management system for learning through the “Plan Ceibal” programme. Created in 2007, this initiative has helped consolidate a robust infrastructure that contributed to the implementation of the “Ceibal at Home” programme after the outbreak of Covid-19 and the closure of schools. The developments materialized by Plan Ceibal over the last 15 years in Uruguay have provided most of the country's students and teachers with devices, connectivity and a set of digital resources and adaptive solutions that eased their transition from face-to-face to online lessons, mitigating the disruptive negative effects of Covid-19 on education. Implementing and scaling an intervention as large as Ceibal at Home meant rising to a number of challenges, including providing the infrastructure for internet connectivity, especially for students in households that could not meet this kind of cost. As a solution, Ceibal at Home signed agreements with the National Telecommunications Agency (ANTEL), the state internet provider and market leader, and private internet providers for the purpose of providing access to educational resources and platforms at no charge for the use of internet data (Ripani, 2020).

One of the recommendations at the level of education policies that have emerged in the context of the pandemic is related to the differentiated closures of Educational Institutions (EIs). More precisely, those areas with a low incidence of the virus and/or minimum rates of infection should not be equally affected by the general closures that use as a standard the incidence of the virus in areas with high infection and spread rates – usually EIs located in densely populated built-up areas. Nicaragua, for instance, was the only country in Latin America not to close its EIs throughout the pandemic as they implemented their “teleclases”. In this context, the Nicaraguan State has received cooperation for the institutional strengthening of the digital capacities of EIs to promote the continuity of education. One of the main collaborators has been the Government of Japan, which has contributed with the provision of school material and the training of teachers for the academic levelling of the most vulnerable students in the context of COVID-19 (UNICEF, 2021).

The interruption of education and the negative economic impacts caused by COVID-19 put the education of many students in Latin America – especially those in situations of vulnerability – at risk (Alas Solís et al., 2020). In view of this, Honduras has implemented “Educatrachos”, a programme whereby educational resources are offered to teachers, students, and caregivers without the need for internet connection (Educatrachos, n.d.). This alternative helps to overcome the gaps in access and connectivity at home. According to Alas Solís et al. (2020), by June 2019, only 16.4% of the urban population in Honduras

had internet access, while in rural areas the percentage was a mere 2.1%. Another success factor of “Educatrachos” is the diagnosis of learning to determine the student’s level of education so that the material and resources are adapted and suited to their level, as students develop socioemotional skills (Educatrachos, n.d.).

To complement the Latin American experiences aimed at addressing the needs of the most vulnerable students during the pandemic, an interview was conducted for the development of this paper with Vicky Colbert, Director and Founder of *Fundación Escuela Nueva* (FEN), a pedagogical model that has revolutionized the education of vulnerable populations living in rural and marginal urban areas of Colombia, and whose experience has been replicated globally in countries such as Brazil, the Philippines, Uganda, Mexico, Nicaragua, and Vietnam, among others.

FEN’s education model focuses its efforts on the cooperative learning of the students, who receive personalized guidance to empower them and make them active members of their communities, which have often been hit by violence, displacement, poverty and marginalization, among others. This model has produced positive results among migrant students from Venezuela living in Colombia. Official figures show that in Latin America and the Caribbean there are 4.6 million Venezuelan migrants (R4V, 2021). Similarly, by 2020, almost 16.2 million people had emigrated from their countries of origin in Central America (UN DESA, 2020). In this context, and since migration is not a phenomenon alien to the region, it is necessary for governments to consider implementing policies that will promote the continuity of education for children and adolescents who are members of these communities. At present, FEN has two flagship education programmes: 1) *Escuela Nueva* (New School) for rural populations, and 2) *Círculos de Aprendizaje* (Learning Circles) for migrant populations. The interview with Vicky Colbert and the experience of her FEN team helped identify some of the best practices implemented during the pandemic with students and teachers facing situations of vulnerability:



## One-on-one support for teachers on specific topics

With the outbreak of the pandemic and the launch of numerous digital tools for teaching practice, many teachers, especially those who work in rural areas, perceived an oversupply of resources they had very little training for or little time to explore. Faced with this situation, FEN managed to focus on supporting teachers on a personalized, one-on-one basis, and focus on specific tools that would improve their teaching practice. Since one of the main challenges cited by teachers was related to alternative forms of student assessment of vulnerable populations, FEN provided them with remote formative assessment tools that would help identify and meet the learning needs of their students so that they could keep up an outstanding academic performance. In this same context, FEN has internationalized its model, through which hundreds of teachers in Colombia, Guatemala, Brazil, Paraguay, El Salvador, the Dominican Republic, Nicaragua, Panama, Peru, Chile are guiding their teaching practice towards a new paradigm in which they act as mentors, in line with FEN's policy since its inception in the late 1980s (IDB, 2021). The objective is for teachers to guide and support students throughout the education process, with the students as the teaching centre, thus reversing the dynamics of conventional education models – still very popular in Latin America – whereby teachers are perceived as the centre and main source of knowledge.



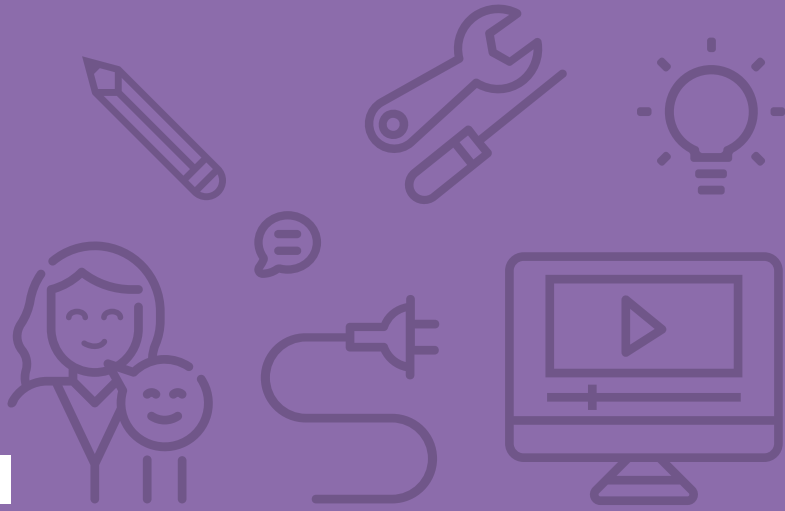


## Development of STEM and 21st century skills in students

The entire population served by FEN is affected by limited access to ICT resources and has no permanent internet connection, but this has not stopped its modules and educational guides from stimulating the development of STEM and 21st century skills. FEN promotes their development by putting the student at the centre of its methodology, favouring an education approach driven by the questions asked by the students themselves, while sharing them with the rest of the class, and stimulating collective and personalized learning. During the interview, Vicky Colbert stressed that in order to overcome limitations related to access to mobile devices and connectivity for students, FEN teachers had different time slots to share educational content or teaching synchronously. She also highlighted how FEN's work with parents, and/or caregivers has been essential for preventing student dropout. This practice has enabled 100% of FEN-related children and adolescents to continue their training processes uninterrupted despite the challenges of remote learning and connectivity limitations.

Another experience worth mentioning because it aimed to meet the educational needs of students is the *STEM-Verde* project of the Science Innovative Initiative (SI<sup>2</sup>) programme in Costa Rica, which seeks to encourage young people, especially those in rural areas, to become involved in science and organic farming. The educational methodology aims to develop projects based on innovative initiatives focused on the needs of young people's environments, while developing the students' STEM and 21st century skills (*Maestros que inspiran*, 2017).

# 4.



Toolkit

## Toolkit:

Actions that Educational Institutions (EI), school leaders and teachers can take to address the gaps in the mediated education of students from vulnerable populations.

The following Toolkit contains a series of recommendations, indicators and a traffic light assessment tool (Table 2) to address situations of vulnerability among the student population at an early stage. For this exercise, the CoreWoman team has designed a series of 34 indicators in six dimensions:

1. Warning and monitoring system for use during the pandemic
2. Household vulnerability profile
3. Psychosocial care
4. Strengthening STEM and 21st century skills
5. Available tools for ICT-mediated learning and distance learning
6. Sensitive or gender transformative approach to digital education

The purpose is for the leaders and teachers of EIs and local, regional and national government institutions to identify those activities that are within their capabilities in order to prevent learning gaps affecting students in situations of vulnerability in ICT-enabled education from widening as a result of long school closures due to the pandemic or other factors.

Another purpose of this tool is to enable leaders and teachers of EIs – as they weigh their performance in supporting students in situations of vulnerability during COVID-19 – to monitor the internal institutional process and design actions and practical tools to tackle the adverse effects of COVID-19 on ICT-mediated distance learning.

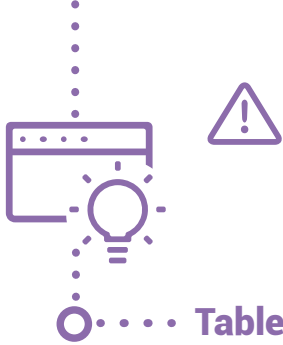
The indicators are assessed on a simple scale and contemplate 4 possible answers that help identify the status of the intervention for each indicator and its meaning compared to the recommendation. The answers are: 1) "Has it", 2) "In the process of creating it", 3) "Does not have it", 4) "Not applicable". When the answer is "Has it", one full point is awarded;

if the answer is “In the process of creating it”, half a point is awarded; and when the answer is “Does not have it”, no points are awarded. The “Not applicable” option does not add or subtract in the weighting.

At the end of the assessment of each recommendation, the total number of points is divided by the number of indicators. It must be pointed out that the “Not applicable” indicator should not be considered in the number of indicators by which the points are divided. Finally, the percentage or score provides an insight into the current status of the EI in terms of each of the recommendations in the six dimensions, according to the scale in Table 1:

**Table 1. How to read the results by recommendation levels**

<i>Status of the intervention</i>	<i>What it means</i>
Beginner 0-24%	The EI does not have a plan or has not considered actions to accommodate teachers and/or students in situations of vulnerability who could be suffering great losses for ICT-mediated learning. We recommend that the EI should focus its attention and resources on this recommendation.
Intermediate 25-49%	The EI recognizes situations of student and/or teacher vulnerability but needs to take more specific actions. We recommend further action on the recommendation by increasing assigned resources and service, developing internal work plans and carrying out actions that will help meet the suggested indicators.
Advanced 50-74%	The EI has met most of the indicators for each recommendation. Situations of vulnerability are recognized and plans and goals have been implemented to accommodate students and/or teachers in situations of vulnerability. We suggest continuing to carry out complementary actions to provide better support to this population.
Leader 75-100%	The IE has managed to meet almost all indicators. Situations of vulnerability facing students and/or teachers are addressed in order to improve teaching processes and learning at the EI. We recommend documenting and sharing its experience at best practice fora with other EIs.



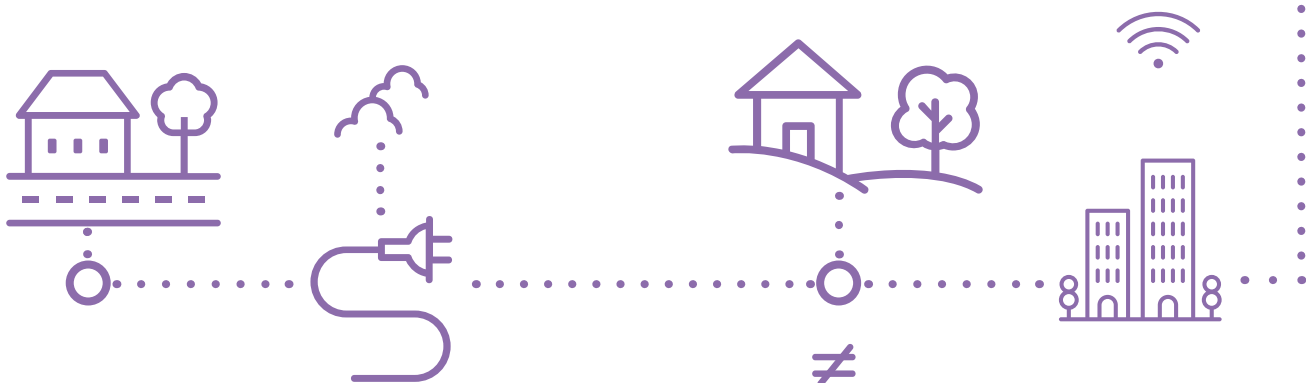
**Table 2. Toolkit with traffic light assessment**

1. Warning and monitoring system for use during the pandemic				
We recommend creating a record of students disaggregated by sex and other characteristics such as ethnicity, geographic location (rural or marginal urban), immigration status, and disability, among others, that will help identify early signs and make the relevant interventions that will address the vulnerabilities of the student body before the losses in their learning increase or they drop out of the education system.				
Indicator	Has it (1 point)	In the process of creating it (0.5 points)	Does not have it (0 points)	Not applicable
1.1 The EI has a school dropout record disaggregated by sex, ethnicity, immigration status, ethnicity, etc.				
1.2 The EI has a record of students who have experienced connectivity difficulties following classes disaggregated by sex, ethnicity, geographic location (rural or marginal urban), immigration status, among others				
1.3 The EI has knowledge assessment for students who have temporarily dropped out and returned to school				
1.4 The EI has assessed and/or developed new content or restructured existing content to focus on the students' basic learning needs				
1.5 For students with disabilities, the EI has adjusted the content to facilitate accessibility according to the type of disability.				
1.6 The content delivered via transmedia environments has been adjusted for the population with disabilities, for instance, sign language and subtitles for television content, braille or other script for printed teaching guides				
Percentage	/6			

## 2. Household vulnerability profile

We recommend creating a record with the profile of households served by the EI to identify aspects of vulnerability and carry out interventions aimed at meeting their needs for ICT-mediated learning.

Indicator	Has it (1 point)	In the process of creating it (0.5 points)	Does not have it (0 points)	Not applicable
2.1 A representative of the EI has made visits to the students' homes				
2.2 The EI has a descriptive record of its enrolled students' home learning environments				
2.3 The EI has a record of the makeup of the students' and teachers' households (whether they have a male or female head of household, or both; number of people living in the household; etc.)				
2.4 The EI has a record of the employment status of the head of household (employed/unemployed)				
2.5 The EI has a record of the number of households with devices with and without internet access				
2.6 The EI has a record of the time students spend learning with ICT resources per week				
Percentage	/6			



### 3. Psychosocial care

We recommended that resources should be made available so that students, teachers and caregivers have safe spaces for dialogue and guidance options in the event of risk of physical, emotional and/or psychological abuse that may threaten their life and mental health and affect their ICT-mediated learning processes, in addition to greater learning losses.

Indicator	Has it (1 point)	In the process of creating it (0.5 points)	Does not have it (0 points)	Not applicable
3.1 The EI has monitored the mental health of its students and teachers during the pandemic				
3.2 The teachers have provided spaces to discuss mental health issues during the pandemic within the EI and with their students				
3.3 The EI provides safe spaces for students, teachers and caregivers who feel threatened by situations of physical, psychological, emotional risk.				
3.4 The EI is aware of the relevant institutional departments to guide students, teachers, and caregivers in the event of reports of a risk of physical, psychological, or emotional abuse.				
Percentage	/4			

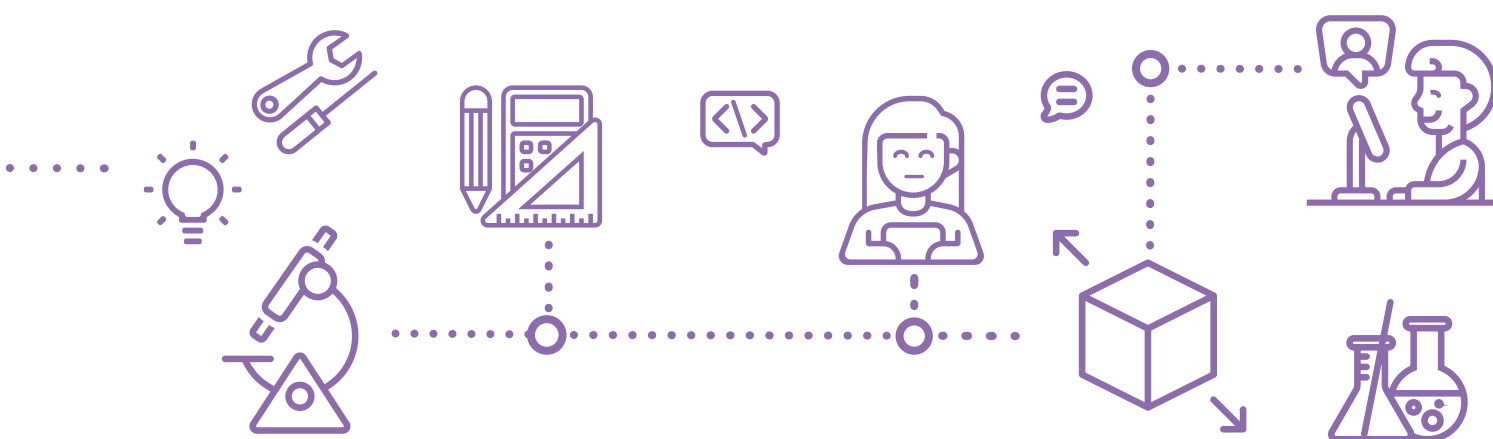




## 4. Strengthening STEM and 21st century skills

Regardless of the EIs' and the households' limited access to electronic devices and connectivity, we recommend that both the curricula and pedagogical practice should emphasize the development of 21st century skills, particularly socio-emotional skills and STEM competences. In addition to being essential for the labour market, this set of skills contributes to better interaction among students, teachers, and content.

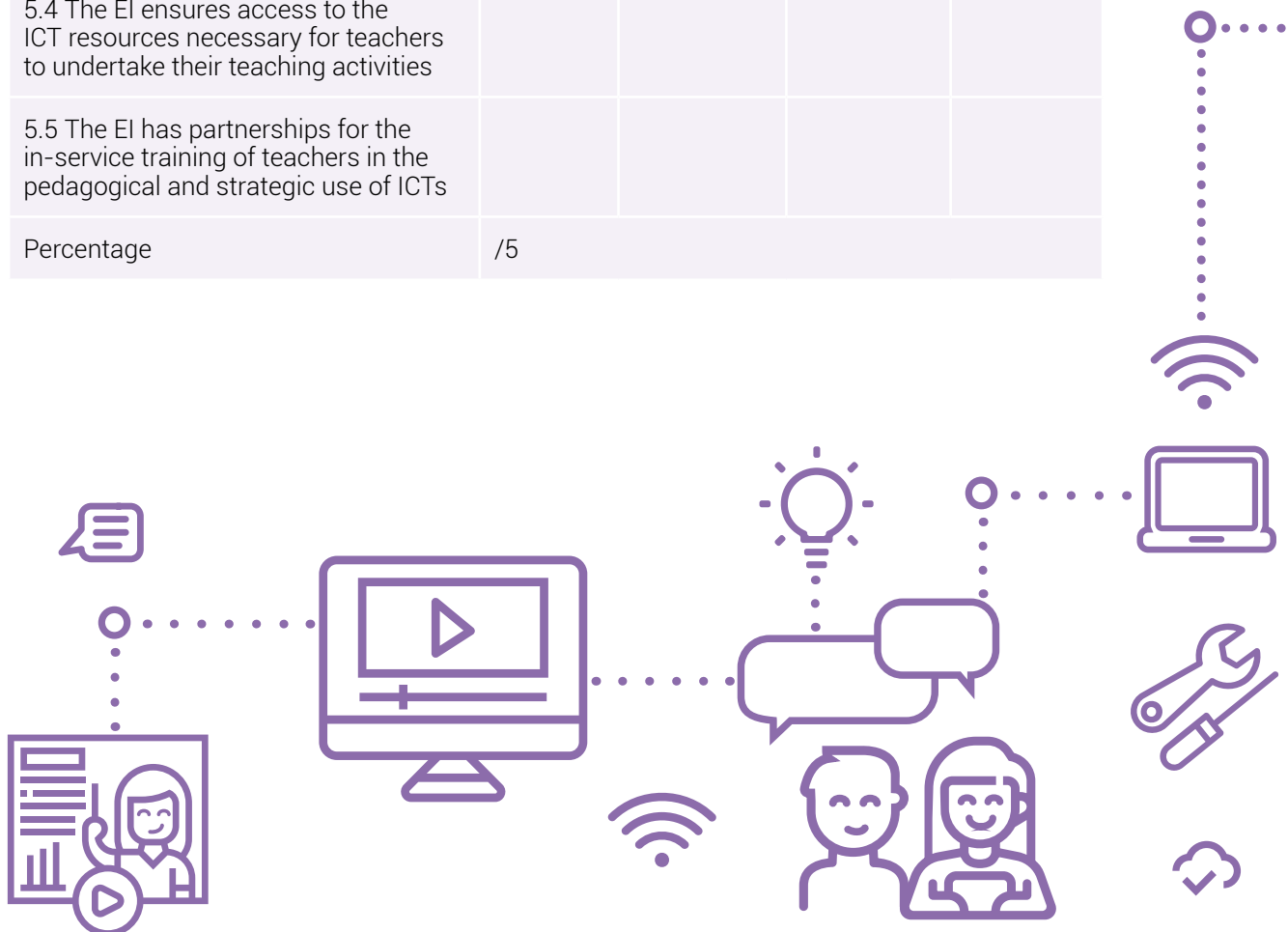
Indicator	Has it (1 point)	In the process of creating it (0.5 points)	Does not have it (0 points)	Not applicable
4.1 The EI has a curriculum that includes the pedagogical use of ICT resources				
4.2 The EI incorporates ICT resources in the learning process integrating 21st century skills				
4.3 The EI carries out individualized assessments of the digital skills of students and teachers				
4.4 The EI provides teachers with training in the strategic use of digital resources for virtual learning environments.				
4.5 The EI cooperates with other EIs to improve its ICT resources and tools				
Percentage	/5			

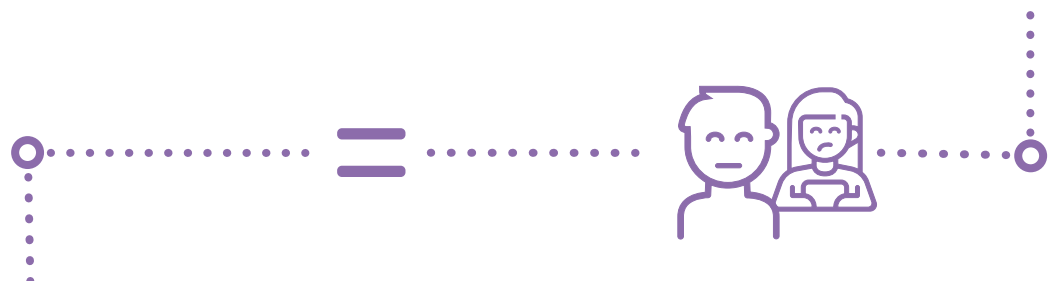


## 5. . Available tools for ICT-mediated learning and distance learning

We suggest standardizing the resources and digital content for at-home learning available at the national level and provided free of charge on public platforms and by other institutions. The purpose is to facilitate access for other EIs that have not developed these tools or content, thus standardizing content quality.

Indicator	Has it (1 point)	In the process of creating it (0.5 points)	Does not have it (0 points)	Not applicable
5.1 The EI has a catalogue of available ICT resources				
5.2 Students may choose the kind of device they can use for their learning				
5.3 The EI has a mechanism that helps expand access to ICT resources and tools				
5.4 The EI ensures access to the ICT resources necessary for teachers to undertake their teaching activities				
5.5 The EI has partnerships for the in-service training of teachers in the pedagogical and strategic use of ICTs				
Percentage	/5			





## 6. Sensitive or gender transformative approach to digital education

We suggest including the sensitive approach which recognizes the specific or differential needs and barriers experienced by teachers, children or adolescents for real, effective equality; in this case, in terms of access to, use of and learning mediated by ICTs. This recognition also applies to household members and/or caregivers, so that their needs and barriers are recognized and addressed for optimized distance learning for children and adolescents.

Indicator	Has it (1 point)	In the process of creating it (0.5 points)	Does not have it (0 points)	Not applicable
6.1 The EI identifies potential gender gaps in its teaching staff for the integration of ICTs into pedagogical use				
6.2 The EI has tools that help observe differences between boys and girls in terms of: active and passive use of ICTs, performance with 21 century skills				
6.3 The EI assesses different levels of self-confidence in the use of ICT between male and female students and teachers				
6.4 The EI, its leaders and/or teaching staff discuss or have discussed the effects of social standards on the experience of boys and girls with digital education				
6.5 The EI has established partnerships with organizations or other partner institutions to stimulate the interest and participation of girls in STEM areas				
6.6 The illustrations in the teaching guides and other content for learning avoid gender stereotyping				
6.7 The IE identifies the digital skills of parents and, in the case of female heads of household, offers basic training alternatives				
6.8 The education, ICT, or other secretariat in the public sector has offered mechanisms that provide vulnerable households, especially those headed by women, with access to cost-efficient internet rates (low cost and high speed)				
6.9 The teachers use mechanisms to identify unconscious biases in their teaching practice				
Percentage	/8			

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