

Impacts of Remote Learning Measures on Educational Access and Quality in Ecuador

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Background information on Ecuador

The Republic of Ecuador is situated on the northwest coast of South America, bordered by Colombia and Peru. Its population was projected at about 17.9 million in early 2022 (Instituto Nacional de Estadística y Censos [INEC], 2022). The majority of the population, approximately 11,200,000, lived in urban areas in 2020, while 6,300,000 lived in rural areas (INEC, 2018). About 28% of Ecuadorians are under the age of 15, and 65% fall within the age range of 15-65 (Barros, 2019). Women outnumbered men by about 200,000 in 2020 (INEC, 2018).

As socio-culturally diverse as it is biodiverse, Ecuador has historically faced complex inequalities along regional, rural-urban, ethnic, and class lines (Radcliffe, 2018). While national policies that aim at promoting and supporting indigenous ways of living, such as *Buen Vivir*, have undertaken to address these issues through their commitment to the Sustainable Development goals (Radcliffe, 2018), the year leading up to the 2020 pandemic was politically turbulent. When President Lenín Moreno took measures to limit fuel subsidies in October, 2019, indigenous communities faced disproportionately negative effects on a major source of their income. Soon, transport strikes, street-obstructing *paros*, and protests by students, teachers, and indigenous leaders put the nation on hold (España, 2019). After two weeks, the government reached an agreement with the Confederación de Nacionalidades Indígenas de Ecuador (CONAIE) to return fuel subsidies, and protests died down (Cabrera, 2019). These political tensions heightened national awareness about the economic plight of indigenous communities and increasing poverty and inequality in the nation, especially in the large informal sector. COVID-19 would further expose these inequalities.

Ecuador's education system

The mission of Ecuador's national Ministry of Education (Ministerio de Educación [MINEDUC]) is to guarantee education between the ages of 3 and 17 to those living in the country (Ministerio de Telecomunicaciones [MINTEL], 2022). Educational levels consist of initial or *inicial* (3-5), basic or *educación general básica* (6-11), and high school or *bachillerato* (12-17), all of which are compulsory. The school system and higher education system function separately (personal communication, August 25, 2021).

Ecuador's student population during the 2019-2020 school year was 4,407,030 (*Estadísticas educativas-Datos Abiertos*, n.d). The pre-primary enrollment rate prior to COVID-19 was 62.45%, the primary was 90.94%, the secondary was 84.67%, and the enrollment of people ages 18-22 in tertiary education was 44.89% (UNESCO, 2017). Furthermore, there is a slightly higher enrollment ratio for girls than boys at all levels. In 2017, the public sector educated 67.6% of Ecuador's students in 1st grade through high school, while the remaining 34.2% attended private, nonprofit, or parochial schools. By 2021, 78% of Ecuador's students were enrolled in public schools (personal communication, August 25, 2021). At the university level, 56.7% attend public institutions, and the rest attend private

universities. In Ecuador, 28.4% of students following the Intercultural Bilingual Education model (IBE) live in urban areas, while the remaining 71.6% are rural, making up over 143,000 bilingual students. Of the 4,260,688 non-IBE students, 77.8% are urban and 22.2% are rural (Educar Ecuador, 2020). The socioeconomic level of families has a positive correlation with performance across language, math, and science subjects, in third and sixth grades according to The Latin American Educational Quality Evaluation (ECEAL) (Sistema de Información de Tendencias Educativas en América Latina [SITEAL], 2019). In 2014, 29.8% of the population was living under the poverty line, and 10.3%, under the line of indigence (SITEAL, 2019). This correlation indicates a socioeconomic inequity in educational quality and access.

In recent years, policymakers have increasingly moved toward reducing inequality, implementing learning standards, expanding digital, environmental, arts, and intercultural education. In 2000, during the World Education Forum, Ecuador committed to The Six Objectives of Education for All, and saw improvements across multiple areas (SITEAL, 2019). First, between 2006 and 2014, the proportion of adolescents who completed high school increased by 16.9% (SITEAL, 2019). Then, bilingual education, which was officially recognized in 1981 and had expanded in 1993 through a full policy and curriculum model (Hornberger, 2000), saw the creation of the Secretary of *Educación Intercultural Bilingüe* (EIB)¹ in 2018 (Ministerio de Educación [MINEDUC], 2018). Now, the national curriculum is available in 14 indigenous languages.

Recent education policy in technology and ICT

Ecuador's education policy has proactively addressed, though not completely achieved, digital literacy among the student population over the past two decades. MINEDUC's ten-year plan in 2006 included improvement of technological resources and infrastructure (MINEDUC, 2007). In 2010, MINEDUC collaborated with MINTEL to implement a more comprehensive project for the development of digital skills and infrastructure through schools. The project, called the Integrated System of Technologies for School and Community (*Sistema Integrado de Tecnologías para Escuelas y Comunidades*, SITEC), included the provision and integration of internet and devices, into schools (Barros, 2019). SITEC also included digital content development and docent training in the use of new tools and platforms. In 2015, MINEDUC created *Educar Ecuador*, an online School Control Management System to facilitate digital learning and communication (*Instituciones educativas*, 2016). Through the platform, students, teachers, administrators, and families have a shared space for classwork, grades, schedules, calendars, communication, and more. The platform *Educar Ecuador* had already been used nationwide for four years before the onset of the pandemic and its role in the COVID-19 educational plan, although lack of access to information technology created a barrier for some schools, students, and teachers.

Access to information technology is on the rise in Ecuador. According to INEC (2019) in 2018, 24.5% of homes had desktop computers, 24.2% had portable computers, and 11.2% had both. Nationally, 37.2% of homes had internet access (46.6% of the urban population, and 16.1% of the rural population had internet at home). About 50.1% of Ecuadorians use computers, and 55.9% use the internet, though not necessarily in the home. In urban areas, 71% used the internet in the home, while the rest of urban users utilized it at work, in school, in centers of public access, at another person's house, or another place. By contrast, only 49.1% of rural internet users connected in the home. Fifty percent of urban Ecuadorians had a smartphone, compared to 23% in rural. Women connected to the internet, and used computers, cell phones, and smartphones at slightly lower rates than men, nationwide (INEC, 2019). These statistics have implications for educational access,

especially during the switch to remote learning brought on by the pandemic. Those without internet access (especially when using the internet outside the home is not an option) have less access to the digital platforms distributed by the MINEDUC.

Remote learning measures taken during social distancing

Ecuador's MINEDUC responded swiftly to the COVID-19 pandemic. Suspension of classes in the Sierra and Amazon was effective March 12, 2020 and was repeatedly extended during the following months. Coastal schools, which were on break during the onset of the pandemic, eventually delayed classes until June 1 ("Clases en el regimen Costa-Galápagos," 2020). School closures included initial education through high school, across public and private sectors. The national committee of emergency operations stated on March 15 that teachers would hold online classes, and some materials would be distributed via television channels (ECLAC, 2020). Universities closed their doors, relocated students, and shifted to online instruction during the month of March as well. Many private schools, which were facing overdue payments at the rate of 40-60% even before the pandemic, struggled to remain open as families navigated job losses (Torres, 2020). The MINEDUC promised to absorb students at private schools that closed despite strained budgets and increasing class sizes.

The Educational Plan for COVID-19 from the MINEDUC is titled *Aprendemos Juntos en Casa* (Let's Learn Together at Home). The plan includes continued teacher professional support, a free online education portal for students, families, teachers, and administrators, radio and television channels to broadcast educational programming, and some printed and printable materials for those without internet access (*Recursos educativos digitales*, 2022). Over 840 resources for teaching and learning were made available on March 16, 2020, on the portal at Recursos2.educacion.gob/ec. The website for *Aprendemos Juntos en Casa* includes a resource guide for families, stressing the importance of pedagogical and emotional accompaniment for learning. Alongside the *fichas pedagógicas* (pedagogical files containing lessons and curriculum for teacher and family use), the MINEDUC encouraged teachers to review and adapt materials to their context and needs. The *fichas pedagógicas* themselves were designed to encompass a wide range of educational levels. Resources for the 2019-2020 school year were divided into initial/prep (grade 1), elementary (grades 2-4), middle (grades 5-7), upper, (grades 8-10,) high school (courses 1-3), and special education. Accompanying weekly lessons for each age group were 10-15-minute audio clips posted online, whose views on Youtube range from 60 to 11,000. A digital platform specific to high school students called AVA was offered resourced virtual classrooms for Math, Biology, Physics, Chemistry, Social Studies, Language, and Literature (MINEDUC, 2020 a). Teachers and students can connect through these classrooms for lessons, assignments, and grading. All resources from *Aprendemos Juntos en Casa* and AVA are free available to public as well as private schools via *Educar Ecuador*, the online educational community of the MINEDUC.

Education professionals were able to access the *Sistema de Seguimiento de Actividades de Teletrabajo* (Teleworking Activities Monitoring System) through the MINEDUC website. Here, teachers and personnel of educational institutions could register for remote teaching and learning activities (MINEDUC, 2020 b). Teachers who facilitated digital instruction were encouraged to organize their digital classroom using the platform *Mi Aula en Línea* (My Classroom Online), provided by the MINEDUC through Microsoft Teams. In order to help decrease site traffic and avoid crashes, students and families were asked to download PDFs of resources and digital textbooks from *Aprendemos Juntos en Casa*, and use WhatsApp to communicate with their teachers.

Ecuador offered additional resources to keep providing the whole student population with education. The IBE system in Ecuador developed and distributed educational workbooks in 14 indigenous languages, which could be accessed online or in print. In May, the Secretary of EIB announced 1,500 vacancies for potential Intercultural Bilingual teachers and funding for professional development of 200 current teachers (MINEDUC, 2020 c). Furthermore, included in the *Plan Educativo: Aprendemos Juntos en Casa*, Ecuador has added educational TV programming on 160 channels, as well as 24-hour online access to the videos at <https://www.educa.ec/>, available on 1,000 radio channels across the country divided by age group. For students in areas with limited internet access, the Ministry made deliveries of printed guidebooks and workbooks in Spanish, as well as other languages (MINEDUC, 2020 d).

Introduction to the analysis

The following analysis explores the ways in which the digital measures taken by Ecuador's MINEDUC affected the access and quality of education in Ecuador, as well as impacts of these changes on existing socioeconomic gaps in the country. The exploratory study was based on two separate semi-structured interviews which followed a set of interview questions based on the research questions and the literature review. One interview was with an educational practitioner and one with a policymaker. The first interviewee was the director and sole multi-grade teacher at a public IBE elementary school in a rural zone of Ecuador. This interview took place in December 2020 over a Zoom call and lasted about 40 minutes. It was recorded and later transcribed by the researcher with the help of the software, Sonix. The second interviewee had served in a high rank position in the MINEDUC during the pandemic, and this interview was carried out in August 2021, using the same methods and duration as the first interview. The analysis of the data indicated that participants conceptualized academic quality as care for the holistic wellbeing of students as well as taking opportunities provided by remote learning for innovation in education. Educational policy, curriculum, and practitioners emphasized these forms of quality education during the pandemic. Another finding was the roles of technology and teachers as educational gatekeepers. Educational access was mediated by access to technology, and/or teacher responsibility to deliver other forms of remote learning. Teacher responsibility was especially high in rural areas where access to technology is scarcer. Finally, *digital divide* is a term used in recent decades to describe the gap between those who are able to access and effectively use new technologies, and those who cannot (Van Dijk, 2012). Social distancing highlighted the digital divide in Ecuador, but the diversity of measures offered helped to mitigate adverse effects of the digital divide. Even where technological access was limited, the wealth of digital resources developed in response to the pandemic provided professional support to teachers. Findings are discussed below.

Quality as holistic wellbeing and innovation

Findings indicated that quality education during the pandemic meant more than effective remote lessons and high levels of academic performance. Remote learning measures in Ecuador impacted the quality of education by expanding its focus on holistic wellbeing and innovation.

The educational strategy of the *Plan Educativo* emphasized holistic wellbeing by including policies and curriculum to preempt adverse effects of social distancing. The MINEDUC's top priority was to guarantee educational retention especially for the vulnerable populations by protecting both physical and psycho-emotional health (personal communication, August 25, 2021). The government facilitated emergency food baskets,

domestic violence prevention measures, and sanitary health education during the pandemic (Coronavirus Ecuador, 2020). The *Plan Educativo* also invited students and families to work remotely with student counseling departments and developed curriculum that addressed mental health issues associated with isolation (personal communication, August 25, 2021). The MINEDUC viewed teachers as key players in the quality of policies geared toward holistic wellbeing and invested in trainings for socioemotional support in the remote teaching context. One recipient of these trainings was the school director, who commented positively about the quality of the online trainings as well as the digital curriculum, particularly that which focused on emotional health. The curriculum served as a professional resource to him and his colleagues in similar schools and districts (personal communication, December 22, 2020). For the school director, holistic wellbeing also included learning and loving values rooted in the student's cultural identity: "the idea is that the children learn... good values; all the values that they should understand and love, always coming from their cultural identity... with a principle of development and a social principle of helping others," (personal communication, December 22, 2020). Even when rural or low-income students lacked digital access, the platforms helped equip teachers like this interviewee to continue providing quality education that holistically addressed their needs.

With the nearly overnight transformation of Ecuador's education, the MINEDUC recognized an opportunity for innovation. During the months of remote learning, it invested in a variety of pedagogies such as STEM, project-based learning, and experience-based learning, which had not been widely used in Ecuador before. The interviewee from the MINEDUC hopes to see these pedagogies continue to gain prominence in Ecuador. Since the start of the pandemic, the MINEDUC developed at least three quality-related areas for future development: digital learning, teacher professional development, and innovation, which could have lasting impact on the quality of Ecuadorian education. The MINEDUC interviewee said, "I believe that this educational paradigm change has really advanced. [The young people] feel the innovation, the changes, the need for change" (personal communication, August 25, 2021). On the other hand, the school director expressed concern about helping his students keep up with the level of urban schools, which he perceived to have greater access to the digital platforms. He did not anticipate new horizons of pedagogical innovation after the pandemic so much as "teaching that prioritizes the basic subjects. The material [needs to be] basic so that the children can understand and reinforce the subjects that they haven't totally arrived in, so that the kids can be at grade level and can understand better." For him, quality education in the future would involve filling in the learning gaps left by the long days without in-person instruction.

Teachers and technology as educational gatekeepers

During the COVID-19 pandemic, nationwide social distancing policies massively threatened access to education. In response, the MINEDUC designed remote learning measures to meet a wide array of access-related student needs. Especially in rural areas, access to any digital measure was largely mediated by teachers. The following reports on the kinds of interruptions to access, and the role played by teachers and technology.

Due to Ecuador's diversity and existing socio-economic gaps, the COVID-19 pandemic created a hydra of interruptions to educational access. As mentioned above, Ecuador had achieved high levels of nationwide access, so these issues were relatively novel (personal communication, August 25, 2021). While for some families social distancing meant a pivot to remote learning, for others, especially low-income and rural families, it posed incredible barriers. In September 2021, 78% of public school students nationwide had

access to internet connectivity, but only 1 out of 8 had access to a device for personal use (personal communication, August 25, 2021). The MINEDUC interviewee stated that “at the beginning of the pandemic there was an access rate of 20% in rural areas and 70% in urban areas.” Reasons for inability to connect remotely included lack of infrastructure such as cables, as well as broadband and device access. Nineteen percent of families, most of whom were in rural areas, had no access to any device from which to access online platforms. Of the 81% with devices, many families did not have enough devices for all school-aged children in the family to access the platforms simultaneously.

The digital and remote learning measures were designed to meet a wide array of access-related student needs, but not all those needs could be addressed. With the help of international cooperation, technology companies, and universities, the MINEDUC was able to produce over 30 platforms, with educational resources in 14 languages (personal communication, August 25, 2021). Curriculum resources were available in the form of online platforms, print, radio, and television. Students without adequate home access to devices and broadband were not able to access the digital curriculum, though 93% of the country’s students had access to at least radio or television lessons (personal communication, August 25, 2021). In part because certain mobile service providers refused to collaborate to provide free minutes to families, the MINEDUC was not able to meet its goal of total retention.

The responsibility to ensure access to education fell largely on teachers like the one interviewed in this study. During the pandemic, he felt responsible for keeping his rural students’ learning going at a rate comparable to that of urban students. He said, “so that the students don’t fall behind, they follow the same rhythm of study as... all urban [students]. We also have made it possible to bring [those materials] to our children that are studying in rural school so they can be at the same level” (personal communication, December 22, 2020). He personally took on a formidable list of responsibilities during the pandemic. These included printing pedagogical files, often paying for printing, preparing homework assignments to keep students occupied throughout the week, preparing activities that would keep students engaged and reduce depression, preparing physical activities to reduce stress keep students active at home, distributing personal protective equipment and educating families on COVID-19 safety measures, and encouraging demotivated students to complete assignments. The interviewee from the MINEDUC recognized and commended such efforts, saying, “the teachers carried themselves very well and they had to, by any means, contact weekly the students in remote areas. The others had to do it online daily, and ask not only for learning problems, but also about health or other problems” (personal communication, August 25, 2021). Because of the existing digital gap in Ecuador, some rural students often received brief weekly visits from their dedicated teacher, while students with connectivity access were able to interact with their teacher online daily. Even so, teachers were a highly valuable resource for educational access during the pandemic, and their dedication coupled with the diverse modalities of the digital measure ameliorated the drastic interruptions.

The pandemic as a catalyst for narrowing the digital divide

The pandemic highlighted a significant *digital divide* in the country, particularly between rural and urban areas, and families with high and low incomes. The Ministry had already recognized a need to close the digital gap before the pandemic and had begun an initiative to digitize texts and upload them to computer labs in schools (personal communication, August 25, 2021). However, there was very little preparation in terms of at-home device and internet access for rural and low-income families. The MINEDUC and

educational practitioners immediately prioritized vulnerable populations and increasingly focused on addressing the digital divide.

The education sector's emphases on wellbeing and innovation impacted socioeconomic gaps in Ecuador both during the pandemic and in planning for the future. The interviewee from the MINEDUC stated, "we have great challenges at the level of learning and digital gaps. Nevertheless, our greatest preoccupation has been to confront this crisis in a humanitarian and inclusive way in order to guarantee education and protection, and from there, closing gaps" (personal communication, August 25, 2021). Some of the vulnerable groups she listed were: rural, female, and afro-indigenous (these were most affected in terms of access to digital platforms), special needs and early childhood students, as well as the Venezuelan migrant population. The MINEDUC interviewee conceded that it may not have appeared that learning gaps between socioeconomic groups have closed at all during this pandemic. But this does not indicate failure, since the Ministry intentionally prioritized the holistic wellbeing of the most vulnerable, and is now capitalizing on the opportunity for innovation, teacher training, and paradigm change. The digital education agenda now being implemented includes five main work axes: 1) Technological Infrastructure, 2) Digital learning 3) Teacher development, 4) Innovation, and 5) Communication. Considering these goals, the greatest socio-economic impacts of the MINEDUC's response to the pandemic are yet to be seen.

The pandemic highlighted the digital access gap in Ecuador, which informed government policies, and important government initiatives to expand digital access originated in 2021. The school director explained that learning through Zoom was not an option for his rural school, saying, "students here don't have internet, they don't have technological means, nothing" (personal communication, December 22, 2020). In December 2020, he had not heard of any plans from the government to expand internet access but, by September 2021, the Government had announced the plan to install 5,000 subterranean cables in different parts of the country (personal communication, August 25, 2021). Ecuadorians differ in opinion about the return to in-person learning. In the school director's community, the resounding cry in 2020 was for a full return to in-person school. They say that nothing compares to live instruction. He also acknowledged other voices that say that virtual education has a place in Ecuador's future. Either way, he hopes that education continues advancing and stabilizing for the wellbeing of students and their families. For the school director, the digital divide is not synonymous with educational barriers for his students. He said, "we are bringing [education] to them. And with this, we don't put barriers on ourselves. For us, there are no limits when it comes to bringing education to the children" (personal communication, December 22, 2020).

Conclusions

Although Ecuador's government had begun to address the issue of digital access before the COVID-19 pandemic, the low rate of home internet connectivity in 2018 (37.2%) foreshadowed the challenges of doing education from home (INEC, 2018). The MINEDUC's pandemic response strategy, *Aprendemos Juntos en Casa*, accordingly, made vast efforts to provide educational resources that matched the diversity of the country.

Both policymakers and practitioners emphasized holistic wellbeing as part of quality instruction during the pandemic. Facing a widening socioeconomic gap caused by Ecuador's digital divide, they also considered the pandemic an opportunity to meet diverse student needs through innovation. Based on the findings, it did seem that the MINEDUC's leadership was in tune with the diverse experiences of its population and,

as a result, its pandemic response was swift, dynamic, and ongoing. Ecuador's teachers, however carried the weight of responsibility of making sure students were connected to the resources they needed. Although the burden of responsibility falling largely on teachers proved the need for greater valorization of teachers and led to quality education that cared for the holistic wellbeing of students, teachers still needed greater support to fill the multitude of roles they took on. In case of a similar situation, Ecuador would do well to alleviate the additional logistical burdens placed on rural teachers so they can focus on providing quality education. This study was not comprehensive, and more voices would be welcome to the conversation.

Note

[1] In English, EIB translates to Intercultural Bilingual Education (IBE).

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