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SHORT COMMUNICATION

Impact of COVID-19 on rural education: the case of Tilipulo and its regional connection

Impacto del COVID-19 en la educación rural: el caso de Tilipulo y su conexión regional

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ABSTRACT

The COVID-19 pandemic generated a forced transition to virtual education in Ecuador and Latin America, revealing structural inequalities in the region. In Tilipulo, a rural community in Ecuador, students faced barriers such as lack of internet access, technological devices and training in the use of digital platforms. Only 37% of Ecuadorian households had connectivity, a figure that dropped to 16% in rural areas, a common problem in countries such as Peru, Bolivia, Mexico and Brazil, where school dropout rates have risen sharply. Although initiatives such as the COVID-19 Educational Plan in Ecuador attempted to mitigate these difficulties, they were limited in scope. Many teachers resorted to improvised solutions, such as telephone calls, to maintain contact with their students, highlighting the inequality in access to educational resources. In the regional context, countries such as Chile and Uruguay stood out for their technological infrastructure, while others implemented measures such as printed guides and radio programs. In 2021, the hybrid model of education emerged as a viable alternative, combining face-to-face and virtual classes. However, this approach required significant investments in infrastructure and training. The experience highlighted the urgency of policies that ensure inclusive and equitable education, addressing digital and socioeconomic divides.

Despite the challenges, the pandemic spurred technological innovations that could transform education systems. E-learning revealed both strengths and weaknesses, highlighting the need for collaboration between governments, communities and educational institutions to build a resilient and sustainable system.

Keywords: COVID-19; virtual education; digital divide; school dropout; educational inclusion.

RESUMEN

La pandemia del COVID-19 generó una transición forzada hacia la educación virtual en Ecuador y América Latina, revelando desigualdades estructurales en la región. En Tilipulo, una comunidad rural en Ecuador, los estudiantes enfrentaron barreras como la falta de acceso a internet, dispositivos tecnológicos y capacitación en el uso de plataformas digitales. Solo el 37% de los hogares ecuatorianos contaban con conectividad, cifra que descendía al 16% en zonas rurales, una problemática común en países como Perú, Bolivia, México y Brasil, donde las tasas de deserción escolar aumentaron considerablemente. Aunque iniciativas como el Plan Educativo COVID-19 en Ecuador intentaron mitigar estas dificultades, su alcance fue limitado. Muchos docentes recurrieron a soluciones improvisadas, como llamadas telefónicas, para mantener el contacto con sus estudiantes, evidenciando la desigualdad en el acceso a recursos educativos. En el contexto regional, países como Chile y Uruguay destacaron por su infraestructura tecnológica, mientras que otros implementaron medidas como guías impresas y programas radiales. En 2021, el modelo híbrido de educación surgió como una alternativa viable, combinando clases presenciales y virtuales. Sin embargo, este enfoque requirió inversiones significativas en infraestructura y capacitación. La experiencia resaltó la urgencia de políticas que garanticen una educación inclusiva y equitativa, abordando las brechas digitales y socioeconómicas. A pesar de los desafíos, la pandemia impulsó innovaciones tecnológicas que podrían transformar los sistemas educativos. El aprendizaje virtual evidenció tanto fortalezas como debilidades, destacando la necesidad de colaboración entre gobiernos, comunidades e instituciones educativas para construir un sistema resiliente y sostenible.

Palabras clave: COVID-19; educación virtual; brecha digital; deserción escolar; inclusión educativa.

At the beginning of March 2020, Ecuador adopted strict measures to combat the spread of the SARS-CoV-2 virus, which causes COVID-19 disease. These measures included the cessation of face-to-face activities, such as classes at all educational levels. This situation was not exclusive to Ecuador; throughout Latin America, social and educational restrictions marked the beginning of a forced transition to virtual education, revealing deep structural inequalities in the region. The case of the Tilipulo neighborhood in Latacunga, Cotopaxi province, reflects the most common challenges and attempts to adapt to this new reality.

Tilipulo students, as in many rural communities in Latin America, faced technological and economic barriers that limited their access to virtual education. Internet connectivity was one of the biggest challenges, as only 37% of Ecuadorian households had access to the service, dropping to 16% in rural areas, according to UNICEF data. This situation was repeated in other countries in the region, where the most vulnerable communities lacked adequate technological infrastructure. For example, in Peru and Bolivia, thousands of children were left out of the education system due to the lack of electronic devices and connectivity, while in Mexico and Brazil, high dropout rates were reported in rural and indigenous communities.

The case of the Tilipulo neighborhood also reflected an unequal adaptation to the virtual model. Although Ecuador's Ministry of Education implemented initiatives such as the COVID-19 Education Plan "Let's Learn Together at Home," based on pedagogical worksheets and digital platforms, these tools failed to reach all students effectively. Many teachers were forced to adapt their teaching methods to the technological limitations of their students, using means such as phone calls or text messages to deliver classes. This situation, although creative, highlighted the inequality of opportunities and the limited scope of government solutions.

In the Latin American context, the strategies implemented to guarantee educational continuity during the pandemic varied significantly between countries, depending on the resources available. While Chile and Uruguay stood out for their technological infrastructure and teacher training programs, other nations faced more significant difficulties. In Colombia, for example, printed guides and radio content were distributed to reach the most remote areas, but these initiatives proved insufficient to meet the needs of all students.

The pandemic also exacerbated the digital divide in the region, a problem that existed before the health crisis. In 2021, according to ECLAC, 46% of Latin American households lacked internet access, a situation that was particularly critical in rural areas. This disconnection affected students and teachers, who faced difficulties in adapting to the digital environment due to a lack of training and technological resources.

The impact of these inequalities was reflected in the high school dropout rates reported in 2021. In Ecuador, it was estimated that around 5% of students dropped out of school during the pandemic, a trend that was repeated in countries such as Honduras, Guatemala, and Paraguay. Lack of access to the internet, devices, and an adequate learning environment at home were the main reasons for this phenomenon.

Despite the challenges, the pandemic also drove innovation and significant educational learning. In countries such as Argentina and Costa Rica, free digital platforms and teacher training programs were developed to improve the quality of virtual learning. In addition, mobile technologies, known as m-learning, were promoted to facilitate access to education in homes that did not have computers. Although limited in scope, these initiatives demonstrated the importance of technology as a tool for reducing educational gaps.

In Tilipulo, the experience of virtual education highlighted both the strengths and weaknesses of the Ecuadorian education system. Although a certain degree of educational continuity was maintained, learning was uneven and depended to a large extent on the resources available in each household. In addition, students faced additional difficulties, such as the lack of pedagogical support and increased family responsibilities during lockdown, which limited their ability to concentrate on their studies.

In 2021, the transition to a hybrid model of education presented new challenges and opportunities in Latin America. In Tilipulo, as well as in other rural communities in the region, the combination of face-to-face and virtual classes represented a viable alternative to guarantee the health and safety of students and teachers while improving access to learning. However, this transition also required significant investments in infrastructure, training, and pedagogical resources.

The experience of Tilipulo and Latin America highlights the need to prioritize education in political and social agendas. The pandemic exposed the vulnerability of education systems and the urgency of implementing policies that guarantee equitable access to education, regardless of socioeconomic or geographical conditions. It also highlighted the importance of collaboration between governments, educational institutions, and communities to overcome challenges and build a more inclusive and resilient education system.

In conclusion, virtual education during the COVID-19 pandemic represented an unprecedented challenge for Ecuador and Latin America. Although this modality made it possible to maintain educational continuity, it also revealed profound inequalities affecting millions of students. The lessons learned during this crisis must serve as a basis for transforming the region's education systems and promoting inclusion, equity, and innovation at all levels.

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CONFLICT OF INTEREST

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