



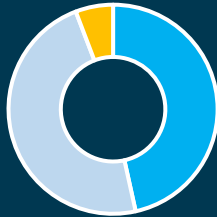
Montenegro Country Brief

Connectivity in Education

A Crisis of Learning in Education...

In Montenegro, there exists a crisis of learning in education. This is exemplified by out-of-school rates in the country, as well as those not achieving minimum proficiency. While 95,981 children and adolescents are enrolled in primary and secondary schools, **5,918 between the age of 6 and 17 are out-of-school**. Additionally, approximately **50.6% of children and young people do not achieve minimum proficiency** in foundational skills needed for further learning and skills development.^{1,2}

- Enrolled, achieving minimum proficiency
- Enrolled, not achieving minimum proficiency
- Out of School



... becomes acute.

When the COVID-19 pandemic disrupted in-person learning in Montenegro starting in March 2020, the importance of devices and connectivity for the education system was placed in stark relief — as were the inequitable access to such crucial tools.

Increasing Importance of ICTs for Education

All strategies for continuing education during COVID-19 depended on ICTs as a medium for delivery. But **unequal preexisting infrastructure** in households and schools is also a major driver of the longer-term crisis of learning. Access to **connectivity** and **devices** is a **crucial enabler** of the learning process, particularly in:

- allowing a more effective administration of education systems, and
- developing digital skills to prepare students for the future workforce



COVID-19: Strategies for Distance Learning



#UčiDoma YouTube channel and app

1,700 lectures recorded³



TV Broadcasted Lessons

> 66% of citizens have watched the TV channel “#StudyAtHome”⁴

What's been done?

Government Strategies Addressing Challenges

Harmonized with the Digital Agenda for Europe by 2020, Montenegro's Strategy for the Information Society Development (2016-2020) includes the strategic priority of e-education. The strategy envisions that the computer-student proportion should be 1:10 by 2020. The strategy indicators also show that Montenegro plans to provide 100% Internet coverage in regional school units at a minimum fixed Internet speed of 20 Mbps by 2020.⁵

Through the development of the **Montenegrin Education Information System (MEIS)**, the Government of Montenegro has been collecting relevant data on education and schools since 2004, and it is understood as a basic component for implementing ICTs in the education system. This recognition is due to MEIS' project objectives to provide ICT equipment and broadband to all Montenegrin schools to implement ICT-based training programs for children, educators and staff. In 2017, MEIS was upgraded to enable the establishment of an Early Warning System for identifying students who are at risk of dropping out.⁶

Montenegro is committed across multiple strategies to digitalization:

- Strategy of Preschool Education (2016-2020)
- Strategy of Vocational Education (2015-2020)
- Strategy of General Secondary Education (2015-2020)
- Strategy for Inclusive Education in Montenegro (2019-2025)
- Draft “Lifelong Entrepreneurial Learning Strategy (2020-2024)”



Many solutions involve digital technology.

This, in turn, requires both connectivity and devices.



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What Gaps Remain?

Connectivity and Devices at Home⁷



70,815

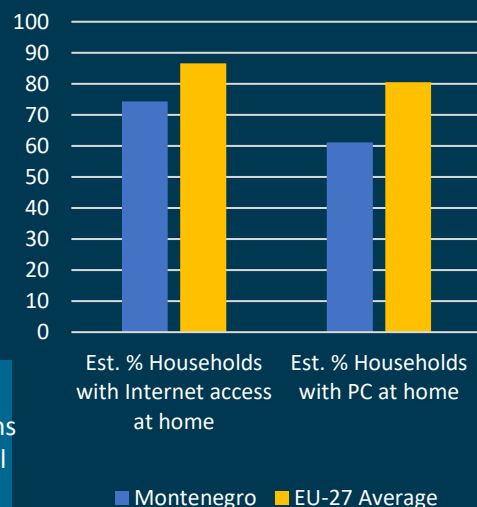
Montenegrin households are not in possession of a PC



46,785

Montenegrin households do not have access to the Internet

Contextualizing the Gaps

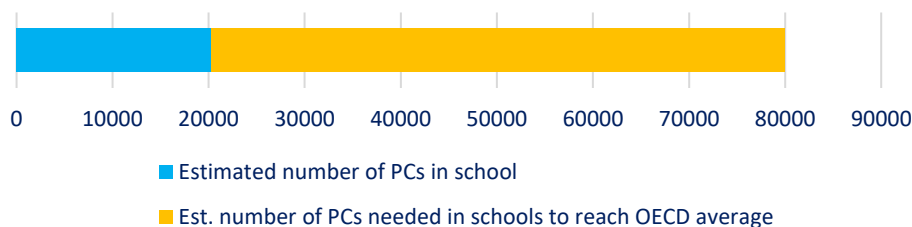


Exacerbating pre-existing inequalities:

The persistent lack of PCs in households is particularly significant when lockdowns triggered by COVID-19 facilitated the transition of economic activity to the digital sphere and transferred both educational and work activities to the household.

Connectivity and Devices at School

Computers per Student in School⁸



59,704

computers are needed in Montenegro to reach the OECD average of 0.83 PCs per student.

Montenegro's Strategy for the Information Society Development (2016-2020) indicates the situation of student-computer proportion was worse than that presented by the OECD, with only of 1 computer for every 16 students at the elementary level and 1 computer for every 14 students at the secondary level of education in 2016.

Mapping School Connectivity



Assessing the level and quality of broadband in schools, and proactively addressing infrastructure gaps, is increasingly important as students return to the classroom. This will ensure that connectivity is leveraged to deliver educational content and to manage the education system in an efficient manner, and that digital skills development is thoroughly included in curricula.

Filling the Device Gap in Schools

Low-Range Estimate⁹

\$4.39 million

to reach the OECD average of 0.83 PCs per student.

High-Range Estimate¹⁰

\$50.7 million

to reach the OECD average of 0.83 PCs per student.



To bridge learning gaps, devices are only as important as the connection that supports them and the access to high quality content and learning they enable. Investment in school and household connectivity as well as content development and robust digital education is vital and must be considered alongside device provision.

Addressing Accessibility



A 2020 assessment by the European Commission has shown that investments in school infrastructure and equipment resulted in the construction or refurbishment of schools across the country, with an additional 107 projects in the pipeline by 2020. Though works to remove physical barriers were completed at several schools during 2019, ICT accessibility remains an important issue to address in Montenegro.¹¹

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Montenegro has a successful history of leveraging innovative financing mechanisms and multistakeholder partnerships toward achieving appropriate levels of devices and connectivity in education. Two key examples are outlined below.

EU Partnerships Filling the Gaps

In 2019, the European Union awarded **600,000 EUR** to Montenegro at the 20th meeting of the Management Board of the Western Balkans Investment Framework on June 25-26, 2019 to fund the “**Broadband Infrastructure Development in Montenegro**” project, which is currently being implemented. One of the project’s goals is to increase the percentage of households equipped with NGA (Next Generation Access) network **from 70% to 95%**.¹²

PPPs with ISPs

Since 2007, Telecom operator Crnogorski Telekom has provided **free broadband Internet** to about 250 primary and secondary institutions in Montenegro, as well as preschool institutions in the country. In 2017, strategic cooperation with the Ministry of Education was renewed, and an agreement was signed that enables educational institutions with technical capabilities to use optical transmission services and TurboDSL, which will provide schools with **increased service stability and higher data flow**, services worth a total of **71,000 EUR**.¹³



ITU and UNICEF are committed

to helping the Government of Montenegro and other stakeholders achieve national objectives. School connectivity is widely recognized as a means to a more efficient administration of educational systems, a building block in supporting innovative ways to distribute education content and increase access, and — most importantly — a fundamental prerequisite to endow pupils with the digital skills necessary to thrive in the job market. The achievement of appropriate device and connectivity levels, both at school and in the home, thus remain priorities of both the ITU Office for Europe and UNICEF Regional Office for Europe and Central Asia. Both offices cherish the opportunity to engage with partners and provide support through **technical assistance, capacity building and research**, as well as **knowledge exchange**.

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Endnotes

¹ Data from UNESCO UIS Database. <http://data.uis.unesco.org>

² UNICEF calculation of the number of students in primary, lower and upper secondary not achieving minimum proficiency in math; Data for Montenegro is calculated using the latest figures available from UIS and PISA.

³ See: <https://www.ebrd.com/news/2020/learning-from-home-in-montenegro.html>

⁴ See: <https://www.unicef.org/montenegro/en/stories/distance-learning-developing-childrens-digital-literacy-during-covid-19-crisis>

⁵ See: https://mid.gov.me/ResourceManager/FileDownload.aspx?rid=251855&rType=2&file=StrategijaMID_finalENG.pdf

⁶ See: <https://www.meisportal.edu.me/meisindex/faces/index.jspx>; See: <https://mps.gov.me/en/sections/ict/86701/2368.html>; See: <https://doi.org/10.1007/978-981-15-6879-4> (*Comparative Analysis of ICT in Education Between China and Central and Eastern European Countries*)

⁷ ITU WTID Database.

⁸ PISA 2018 Results (Volume VI); OECD 2020 (Figure V.5.4 School computers per student, school characteristics and reading performance)

⁹ This estimate is calculated using the cheapest smartphone available in the region, at \$73.60 per device. Price estimate is taken from A4AI price data, averaging the cost of the cheapest smartphones available in Georgia, Turkey and Ukraine. Although Smartphones are used as a proxy for the cheapest way to access online educational content and represent a baseline cost, they are not ideal for sustained learning nor comparable to PCs for educational purposes.

¹⁰ This estimate is calculated using using a price of \$850 per computer and monitor, which is a UNICEF price estimation of a high-end computer and monitor more suitable for learning. It thus represents the most expensive end of the spectrum.

¹¹ See: https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/montenegro_report_2020.pdf

¹² See: <https://balkan.eu.com/eur-600-000-for-the-montenegro-digital-infrastructure-sector/>

¹³ See: https://www.telekom.hu/static-tr/sw/file/Sustainability_report_2010.pdf