

Distance Learning Programs – Map Writeup

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Links to maps:

<https://rpubs.com/cbloodcheney/636616>

<https://rpubs.com/cbloodcheney/636609>

Summary

The goal of the map is to present the information already available in a visually appealing and accessible way. There are two main sources I used to create the map so the purpose was really to combine the data from each source and put it in one place. The information and communications technology (ICT) infrastructure variables, such as internet penetration rate, cost of the internet, etc. are mainly gathered from the World Bank website. We want people to be aware of the different distance learning policies being implemented around the world and also be aware of technological barriers (which is why the ICT variables are also included) in less developed regions. Hopefully people can use the map to answer questions they have about distance learning during COVID-19, primarily what are the types of policies being used and how are countries reaching rural populations.

Collecting Data

In order to create the two maps showcasing the number and types of distance learning programs being used in the midst of COVID-19, two main sources were used:

1. World Bank Brief: [How countries are using edtech \(including online learning, radio, television, texting\) to support access to remote learning during the COVID-19 pandemic](#)
2. UNESCO: [National learning platforms and tools](#)

In addition, the ICT variables were taken from these sources:

1. World Bank ICT Development Database:
<https://data.worldbank.org/indicator/IT.NET.USER.ZS>,
<https://data.worldbank.org/indicator/IT.CEL.SETS.P2>
2. Alliance For Affordable Internet:
https://a4ai.org/extra/mobile_broadband_pricing_usd-2019Q2

3. World Population Review:

<https://worldpopulationreview.com/countries/internet-speeds-by-country>

Additional relevant resources include:

1. CGD - COVID education policy tracking Google Sheets:

<https://docs.google.com/spreadsheets/d/1ndHgP53atJ5J-EtxgWcpSfYG8LdzHpUsnb6mWybErYg/edit?ts=5e6f893e#gid=0>

2. Global Monitoring of School Meals During COVID-19 School Closures:

https://cdn.wfp.org/2020/school-feeding-map/?_ga=2.92012446.521380209.1590186918-328877096.1590186918

The combined dataset has data on created contains data on 156 countries and can be found [here](#). Data from each variable are collected separately and combined together via the Vlookup function. All data except the number of mobile subscription per person are obtained directly. The number of mobile subscription per person was calculated by dividing the total number of mobile cellular subscription by the country population. The learning distance programs have been broken down by policy into online learning programs, radio programs, TV programs, social media platforms, physical government kits, device distribution, virtual reality, and video games. The ICT variables recorded on the maps include mobile cellular subscription per person, smartphone penetration rate, internet penetration rate, and cost of 1GB of internet. The countries that were not included in the sources listed above lack data on the maps. Although there are undoubtedly policies and variables not included in the dataset, these maps are only a first step in what will hopefully become a larger, more comprehensive project.

Limitations

Since the bulk of the information used comes from only two sites, the data presented is far from a complete list of policies being implemented. In addition, while some of the policies are COVID-19 specific, others mentioned were established previously and have been used to aid in distance learning for a longer period of time. The data is missing for multiple countries but could probably be found by doing a more targeted search. Last but not least, the data are not the most updated - for instance, the internet penetration rate was based on 2018.

Next Steps

Potential next steps to improve this project include creating a dashboard and combining the two maps into one. This would involve using the “Shiny” package to make one map that would have the option to filter by number *and* types of policies; however, this would require more time (the amount of time required would depend on the person’s expertise in R Studio). Additional research by country would certainly reveal more platforms and potentially more policies that could be included. The map could also stand to be more visually appealing color wise. The database can be constantly updated to include the latest data.