

Education during the Coronavirus Pandemic: Has the Sole Unequivocal Means of Personal Advancement Been Compromised?

“Education is the one thing that no one can take away from you” -B.B. King. Long since its conception, this proverb continues to be mutually respected by students, educators, and adults that are the byproducts of the educational system. Once knowledge is accrued, its nonmaterialistic qualities prevent it from being lost, stolen, etc., and allow its subsequent application to the collective improvement of society, elevation of socioeconomic status, and wider worldview. Yet the recent Coronavirus Pandemic has effectively hampered students’ ability to connect with the resources requisite to knowledge intake by catalyzing the shutdown of facilities that educate 94% of the world’s student population (United Nations). SD4: “quality education of all” has been inadvertently undermined by an abrupt alteration in systemic condition. Namely, physical and mental health deterioration due to social isolation and unhealthy contingencies in the environment, the extenuation of educational disparities in low-income countries, and an increase in worldwide fiscal strain that effectively diminishes the sum of money that may be spent on education.

In a generation already permeated by numerous mental health problems, the state of the pandemic has not only isolated students from their peers but demolished the structure of their lives indefinitely. Due to social separation, potential familial deaths and unemployment, and the simultaneous impact of many global crises, 29% of school children in the United States were surveyed to have already been experiencing related mental health problems due to Covid-19 by

May 2020 (Gallup). Corollaries of this stress have caused many of even those with consolidated support systems to fall into detrimental living patterns that entail sporadic sleep and eating patterns, spending hours at a time glued to a screen, minimal physical activity, and depreciation of self-worth (NCBI, The Lancet). With over half of United Kingdom teenagers to be sleeping fewer hours than before the pandemic (The Guardian) and an overwhelming majority of 86% of surveyed American college students noticing disruptions in their sleep schedules (NCBI), adolescents have become extremely susceptible to the long-term consequences of circadian rhythm disturbances such as grogginess, weight gain, and cardiovascular disease. Out of the same sample of US college students, 70% stated their dietary habits have been negatively impacted by Covid-19, mainly due to the accessibility of junk food and compulsion to eat when stressed. When coupled with fears to leave their place of residence for fear of the pandemic and a skyrocketing in screen use for recreational purposes and necessitated schoolwork, “Mens sana in corpore sano” has never been more widely and unintentionally violated via the oversaturation of unnatural entities in the average human’s day-to-day life.

My first solution includes a versatile web directory that will match people based on the questionnaire they will fill out prior to enrolling to virtual support groups, mentality stimulating activities (e.g., book recommendations, lectures, online courses, potential hobbies), and local in-person interactions if the circumstances permit. It will be coded in Python for scalability and the applicants’ personal information will be protected by an AES-256 encryption. This secure means of engagement and interaction will offer participants an accessible reprieve from the myriad of local and worldwide conundrum, encouraging them to focus on channeling their energies towards what they *can* control: their own lives.

The attainability of an education in low-income countries is greatly stymied by the Internet connection needed to participate in remote learning. 1.3 billion of the world's school-aged children don't have access (UN News) to the integral determinant of whether they will be successful in the global economy, and of the late, if they will even have the chance to learn the bare minimum to prevent the perpetuation of poverty in their communities. The Sahel region of Africa is area stricken by multiple anthropogenic factors such as climate change, strikes, and insecurity that already put the educational system in a precarious position by forcing many schools to close pre-pandemic. Online schooling as it is undergone in first-world countries is unfeasible in localities equipped with economies on the cusp of collapse and families who barely have the means to afford subsistence, not to mention electricity to power electronic devices, as respective governments cannot always afford to cover even more populous areas in low-income countries with a mobile-broadband network. From observing statistics like the fact that only 30% of the population in developing countries has internet access versus 80% in advanced economies (The World Bank), it is blatantly clear that the pandemic continues to exacerbate the inequalities inherent in global society. These structural weaknesses promote the loophole of poverty, as low-income nations have less money to distribute, and thus already present funding gaps widen. Larger funding gaps diminish possible enrichment for the current generation, and they become less educated and contribute less to their country with respect to the preceding generation, thus failing to bolster their country's economy, de novo. With increasingly fewer economic assets, the country and its people gradually descend into fatal impoverishment without outside intervention.

My solution to the second crisis is to provide the subsidized distribution of a remix on the Aakash 2 tablet, dubbed the world's cheapest tablet at 20 dollars. Instead of utilizing an impermanent battery, it will be equipped with a photovoltaic panel controlled by a mechanical

system that changes the tilt and the orientation of the panel according to where it harvests the most light energy to reach full efficiency. It will utilize a statistical method called Response Surface Methodology to optimize the panels' functionality that correlates RSM inputs to an output that yields a response representing the performance measure of the test. If isolated changes are made to input variables (time, location, etc.), the optimal positioning at any time can be found depending on which changes to the output response are most conducive to energy capture. Once these inexpensive novel technologies are implemented in low-income countries, access to quality education will no longer be a prerogative of those fortunate enough to be born into a well-to-do family, but an inclusive opportunity for all, thereby encapsulating the scope of Sustainable Development Goal 4.

Sources:

“A ‘Digital Canyon’: 1.3 Billion School-Aged Children Can’t Log on to.” *UN News*, 3 Dec. 2020, news.un.org/en/story/2020/12/1078872.

Almusaied, Zaid, et al. “Optimization of Solar Energy Harvesting: An Empirical Approach.” *Journal of Solar Energy*, vol. 2018, 2018, pp. 1–8. *Crossref*, doi:10.1155/2018/9609735.

Calderon, By Valerie. “U.S. Parents Say COVID-19 Harming Child’s Mental Health.” *Gallup.Com*, 12 Mar. 2021, news.gallup.com/poll/312605/parents-say-covid-harming-child-mental-health.aspx.

“Commentary: Many Students in Developing Countries Cannot Access Education Remotely.” *The University of Chicago Harris School of Public Policy*, 22 Mar. 2021,

harris.uchicago.edu/news-events/news/commentary-many-students-developing-countries-cannot-access-education-remotely.

“Connecting for Inclusion: Broadband Access for All.” *World Bank*, 2011,

www.worldbank.org/en/topic/digitaldevelopment/brief/connecting-for-inclusion-broadband-access-for-all.

“COVID-19 Robs Children in Poor Countries of Nearly Four Months Of.” *UN News*, 1 Nov. 2020, news.un.org/en/story/2020/10/1076422.

Dawson, Gloria, and Christopher Mims. “A Look inside the World’s Cheapest Tablet Computer, India’s \$20 Aakash 2 (VIDEO).” *Quartz*, 29 Nov. 2012, [qz.com/32033/a-look-inside-the-worlds-cheapest-tablet-computer-indias-20-aakash-2-video/#:~:text=Content%20By%20Cadillac,A%20look%20inside%20the%20world’s%20cheapest%20tablet,India’s%20%2420%20Aakash%20%20\(VIDEO\)&text=Suneet%20Tuli%2C%20CEO%20of%20Datawind%2C%20and%20his%20%2420%20tablet](https://qz.com/32033/a-look-inside-the-worlds-cheapest-tablet-computer-indias-20-aakash-2-video/#:~:text=Content%20By%20Cadillac,A%20look%20inside%20the%20world’s%20cheapest%20tablet,India’s%20%2420%20Aakash%20%20(VIDEO)&text=Suneet%20Tuli%2C%20CEO%20of%20Datawind%2C%20and%20his%20%2420%20tablet).

“Effects of COVID-19 on College Students’ Mental Health in the United States: Interview Survey Study.” *PubMed Central (PMC)*, 1 Sept. 2020,

www.ncbi.nlm.nih.gov/pmc/articles/PMC7473764.

Ellis, Sarah. “The Growing Mental Health Effects of COVID-19 for Young Adults.” *Healthcentral*, 31 Aug. 2020, www.healthcentral.com/article/mental-health-effects-of-covid-19-on-students.

Marsh, Sarah. “Children’s Sleep Severely Affected by Impact of Coronavirus, Say Experts.” *The Guardian*, 17 July 2020, www.theguardian.com/lifeandstyle/2020/jul/17/childrens-sleep-severely-affected-coronavirus-experts-anxiety-routine.

“World Health Organization - Eastern Mediterranean Region.” *WHO*, 2021, www.emro.who.int/mnh/news/considerations-for-young-people-on-excessive-screen-use-during-covid19.html.

“Policy Brief: Education during COVID-19 and Beyond.” *United Nations*, 2020, www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/08/sg_policy_brief_covid-19_and_education_august_2020.pdf.

Post, The Jakarta. “Challenges of Home Learning during a Pandemic through the Eyes of a Student.” *The Jakarta Post*, 11 Apr. 2020, www.thejakartapost.com/life/2020/04/11/challenges-of-home-learning-during-a-pandemic-through-the-eyes-of-a-student.html.

