

# THE ALCIVAX

**Alcimed** wades into the school reopening debate during COVID, the parallels to remote work, and how it may impact economic recovery.

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## How intertwined are school and work?

Six weeks ago, [the Alcivax waded into the debate on permanent work from home](#), starting with the types of work that were tele-fragile vs. tele-robust. This week, a statement from the [American Association of Pediatricians \(AAP\)](#) calling in person essential and news in [Science on the dynamics of spread in reopened schools](#), begs the question: is remote school tele-fragile or tele-robust?



### School Reopening: Risks and Rewards

Schools are one of the trickiest places to reopen during a pandemic and developing plans that protect the health and well-being of students and staff, while ensuring access to proper education tools and experiences, can be challenging. Reopening schools is not only an education decision but also an essential step towards economic recovery as it increases productivity for parents of school-age children. [School reopening also increases food security and physical activity, decreases the likelihood that abuse, substance use, and suicidal ideation, do not go unnoticed](#). Thus, school reopening may decrease pediatric morbidity and mortality more than it will increase through COVID. This doesn't even take into account [how behind kids now may be academically](#).

It is also clear that outcomes are stratified by age group. [The most tele-fragile learning the youngest students \(>10\) where learning is a fully social activity](#). Older students could handle a mixture of in person and online instruction, while some universities such as [Harvard have gone fully online next year with freshman on campus](#). Though a [2019 study of online learning suggests that online college instruction under the best conditions is still not fully tele-robust](#) as interaction with faculty and other students is still an indicator of success.

But is it safe? The data from around the world seems to suggest so. Cases in Asia ([South Korea, China, and Japan](#)) as well as [European countries](#) after school reopened did not spike, suggesting that in person instruction is not a major contributor to spread. But why? According to current studies [children 18 and under are 33-50% less likely to contract COVID than an adult](#). Exactly why is still being studied. The younger the student the less likely the spread as well, which is good news for reopening schools for the most at risk students. It also validates [masking policies that state only children over a certain age need one](#).



### School Safety Protocols - Asian Model

- **Temperature checks:** In China, young students are checked by a friendly robot before entering a school. The WalkLake robot does not just check temperatures — it scans faces for “signs of illness”. In Vietnam, students are scanned for temperature checks before entering the school premises.
- **Frequent hand washing:** In China, many students are required to sanitize their hands on the way into school, and wash them regularly.
- **Disinfecting shoes:** In Taiwan & China, students have been required to disinfect the bottoms of their shoes as they walk into school.
- **Desk Dividers:** Some schools in Taiwan and China have attached plastic or cardboard dividers to school desks or cafeteria tables. The result resembles a cubicle.
- **Limited class sizes:** Schools have been spacing out desks and have been holding certain classes outside to adhere to social distancing guidelines.
- **Lunch time:** In Taiwan, students eat lunch at their desks to avoid congregating in large groups in the school cafeteria. In China and other countries, students eat in the cafeteria, but have dividers set up between them.
- **Face masks:** In many Asian countries they are required but in others not.



## School's Economic Impact

Some of the economic impacts of school shutdowns are apparent. [Parents attempting to work from home while their kids are not physically attending school are less productive](#) than their childless colleagues. But the connections between the economy and higher education (HE) run much deeper.

HE's economic intersections are varied. They are large employers, drivers of innovation and research, start-up incubators, and their endowments invest heavily. In addition to these immediate effect, HE is also training someone's next hire. Industries, such as tech, architecture, manufacturing, chemicals, aerospace, and pharma, require HE to supply graduates with basic subject matter knowledge that automatically translates to on the job skills. This influx of human capital leads to innovative ideas and is valued in economic terms as the spill over effect. According to a 2019 study, [these spill over effects contribute positively to GDP over and above the direct economic stimulus](#) of running a campus day to day. The overall economic benefits of HE is greater than the cost in macro terms.

In micro terms, this is harder to visualize. For example, [online learning is not as robust as in person learning even in HE](#), but [Harvard is still charging full tuition](#) for a fully online year, putting the personal financial investments directly at odds with the expected level of job readiness. To balance this out, universities globally need to figure out how to do at least some hybrid of online and in person learning. Professional networks begin in HE after all. But we aren't there yet.

Professors at the [Georgia Institute of Technology](#) are [protesting plans to reopen for the fall without mandatory masks](#), putting lives at risk. Professors have a higher risk of severe COVID than students. There are also immigration consequences, as the [US is revoking international student visas if classes are fully remote](#). The [EU travel ban has a student exception](#). These policy differences likely have recovery impacts of their own.



## Treatment Progress

While remdesivir nabbed EU approval this week, its pricing raised eyebrows, and the UK HHS says it has the right to control its manufacture and distribution. However, it is antibody therapies that are getting all the limelight this week. More than 28 K Americans have received convalescent plasma treatment. The FDA is currently looking into its effectiveness as a potential treatment for the coronavirus but the therapy has very low risk of allergic reactions, lung damage and difficulty breathing, and transmission of infections, including IV and hepatitis B and C.

Regeneron has begun a Phase 3 trial testing an antibody cocktail to prevent COVID-19. The study will specifically focus on the cocktail's efficacy preventing disease in 2,000 people who have been exposed to the virus by a close contact, such as a roommate. A separate Phase 2/3 trial for the same antibody cocktail is testing the experimental therapy as a treatment in 2,900 COVID-19 patients who are being treated in hospitals and ambulatory settings. That trial is being run in the U.S. and in other countries like Brazil and Mexico.

Regeneron already has \$450 M deal with the US government to ramp up production before the close of Phase 3 trials. The US will provide doses at no cost and handle distribution. That this deal comes on the heels of Regeneron ending Kevzara after it failed as a COVID treatment is a powerful reminder of the danger in over investing in unproven treatments.



## Vaccine Deals and Dust Ups

Curvac received EU funding to ramp up production and Sanofi/GSK have inked a \$625 M deal with the UK government.

Emergent BioSolutions announced a \$480 deal with J&J to manufacture the drug substance for their COVID-19 vaccine. Other innovative vaccines have hit a snag. Moderna had to postpone starting their Phase 3 trials after a dust up with the FDA over trial design and readouts creating a more than two week delay.

## Superior Economic Crisis Management

COVID-19 pandemic has brought acute economic challenges to Africa, but members of the African Consortium showed exceptional responsiveness to the situation demonstrating that effective African cooperation is possible. Four major factors influence COVID-related economic pressure: tourism, commodities, currency, and day labor. Many African countries rely heavily on tourism as a large GDP contributor. Morocco, for example, is now expected to lose up to 12% of its \$118 B GDP, by 2022. Similarly, commodities contribute more than tourism to African member economies, such as hydrocarbons (30% of Algeria's GDP) and currency fluctuations may drive Africa towards a common currency. But the most common pain point is keeping day laborers from starvation without work.

Africa is up to the challenge, spending \$44 B during this crisis with fiscal stimulus, along with relieving people with lower taxes. They worked as one, using the African consortium as a catalyzer. This unity has worked better in Africa than in other regions in the world. Indeed, "If African countries do not work together, the impact on household welfare will be deeply negative," according to Albert Zeaufac, chief economist for Africa World Bank. This necessity has created links between countries that would have taken years to achieve otherwise. To go further Africa may need external help for new debt.

Additionally, African economists and officials are starting to ask questions that could change the way Africa is doing business. "Why are we importing 94% of the pharmaceuticals?" and "2/3 of Africa's infrastructure is yet to be built, how can we be sure to add renewables, as we build our roads, ports and so on, how do we build this?" are now in the center of some discussions and could represent an exciting future for the continent while providing great business opportunities for multiple companies.

## Best Laid Plans

Over 200 scientists from more than 30 countries are urging the WHO to take the possibility of airborne transmission of the coronavirus more seriously. With herd immunity taking another blow with a Spanish study demonstrating that COVID immunity may be incomplete and transitory. This may require us to get a little more creative with our COVID strategy. Some progress on that front includes:

Smell tests may prove better predictors of COVID than temperature screenings thus improving control measures.

BD has received conditional approval for its rapid POC test for SARS-CoV-2 antigens. Thus nasal swabs could detect active infection for \$20 a test in as little as 15 mins with a hand held device.

The ASM's journal mBio suggests that the MMR vaccine could help to prevent inflammation in COVID-19, suggesting MMR could dampen severe inflammation and mortality, and propose trials for workers.

We are getting closer to understanding the 6 genes linked to increased risk of severe COVID on chromosome as we now know they were inherited from Neanderthals.



## All Joking Aside



Just in time for Bastille Day, COVID seems to have cured the Louvre in Paris of tourist chaos. The normal sea of bodies churning

in galleries has been reduced to a contemplative space with reservations required. Now you can have the Mona Lisa all to yourself, well almost.

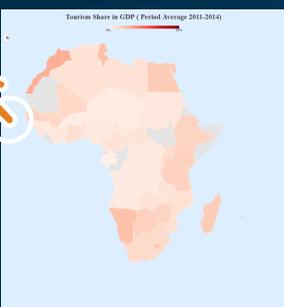
This week's Karma lesson: Brazilian President Bolsonaro after downplaying the seriousness of the pandemic for months, is positive for COVID.

Now that everyone is going back outside, nature enthusiasts should take note that a relatively mild winter will result in an unusually bad tick season. So take a hat that matches your mask.

Finally, several cases of Bubonic Plague have been found in Inner Mongolia, luckily still treatable by antibiotics, and the Chinese have lifted the alert.

## Africa's COVID Response in Graphs, Pictures, & Cartoons

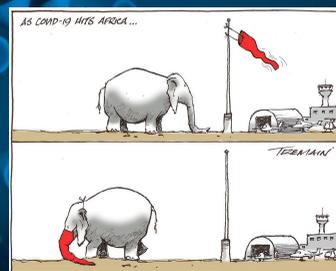
Africa's Tourism Dependency



Africa's COVID Innovations



African Resourcefulness



African Masks

