



COVID-19 AND EDUCATION: INITIAL INSIGHTS FOR PREPAREDNESS, PLANNING AND RESPONSE

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BACKGROUND

COVID-19, the infectious disease caused by the most recently discovered coronavirus, is having a significant impact on education. As of March 6, 2020, 26 countries on three continents have announced or implemented school closures (UNESCO 2020). Fourteen countries have shut schools nationwide, with an impact on more than 291 million children and youth. Another 13 countries have implemented localized school closures to prevent or contain the spread of COVID-19, potentially preventing an additional 471 million children and youth from attending school.

USAID and other development practitioners and policymakers around globe are rapidly mobilizing to develop a coherent, multi-sector strategy for the COVID-19 response. The education sector specifically will contribute to the strategy by defining how support will be prioritized. To contribute effectively to this effort, the education sector is in need of some basic information and data. This summary offers initial observations and answers to key questions for the sector. This document will be updated periodically, as needed, to reflect evolving understanding around COVID-19 and its impact on the education sector.

SOME INITIAL OBSERVATIONS REGARDING COVID-19

COVID-19 transmission: *Some findings indicate that transmission of COVID-19 can occur when people are asymptomatic. This means isolating and quarantining sick people is not enough to mitigate the spread of the disease. More widespread measures of community-wide containment are needed; for example, social distancing (measures that limit where and when people can gather to slow or stop the transmission of disease), cancellation of public gatherings, and community quarantine (Wilder-Smith, Chiew, and Lee 2020).*

- This implies that school closures are likely and will continue in affected countries/communities.
- For COVID-19, 26 countries have ordered nationwide school closures and 13 have localized closures (UNESCO 2020).

A study from China found that increased surveillance, isolation after developing symptoms, and contact tracing can reduce the time an infected case is in the community, thereby reducing the number of other people infected by that single individual (Riou et al. 2020). The same study found that children are just as likely to get infected as adults (7.4 percent and 7.9 percent, respectively), but less likely to develop symptoms. It is very plausible that children are key COVID-19 transmitters, although child-to-child transmission does appear to be lower than expected (ibid.).

We know children are key transmitters of influenza. But with COVID-19, children under age 14 who are diagnosed present with notably less severe symptoms (barring an underlying medical condition, such as cancer).

SARS was contained using syndromic surveillance, prompt isolation of patients, strict enforcement of quarantine of all contacts, social distancing, and, in some areas, community-level quarantine, including school closures in some geographies (Wilder-Smith, Chiew, and Lee 2020).

Testing for COVID-19: As of February 20, 2020, 24 countries in the African region had confirmed they could test for potential COVID-19 infection. This is a significant scale-up from early February, when

only two laboratories in the region (one in South Africa and one in Senegal) had these capabilities. Efforts are continuing to strengthen testing capabilities in more laboratories (WHO 2020).

Vaccine development: When a vaccine for COVID-19 is developed, there may be challenges with getting it to low- and middle-income countries, because countries producing the vaccine may wish to keep the inventory for their own populations (Igoe 2020). This could exacerbate the pandemic in low- and middle-income countries.

Policy and guidance need to be flexible as knowledge and evidence of the disease and its transmission evolves. Decisions around mitigation approaches need to be made in the context of each country's school and public health systems capacity and practices.

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RESEARCH QUESTIONS

I. What are the possible impacts of COVID-19 on the education sector in low- and middle-income and crisis-affected countries?

IMPACT ON EDUCATION SYSTEMS AND SCHOOLS

- Teacher and student absenteeism
- Decreased instructional time and learning
- Increased burden on schools to provide materials, infrastructure, and student and teacher training to mitigate transmission in schools (See [Question 2](#) for details.)
- School closings (See [Question 3](#) for details.)

IMPACT ON STUDENTS

School closures have many potential adverse consequences for students:

- *Interrupted learning:* Children and youth are deprived from in-school learning opportunities (UNESCO 2020).
- *Interrupted access to in-school resources:* Children miss free school meals and other nutrition programs (Manardi, Hares, and Crawford 2020; UNESCO 2020).
- *Interrupted access to in-school safety:* Children are at greater risk for child labor, early marriage, and sexual exploitation, especially in conflict-affected or fragile contexts (Manardi, Hares, and Crawford 2020).
- *Negative psychological and physical impacts:* Children who have been quarantined have higher post-traumatic stress scores (Wang et al. 2020).
- *Social isolation:* Schools are hubs of social activity and human interaction. When schools close, many children and youth miss out on social contact that is essential to learning and development (UNESCO 2020).

IMPACT ON THE COMMUNITY

- *Communication:* Need to promote and communicate healthy practices, such as handwashing (UNICEF 2020).
- *Monitoring and contact tracing:* Need for effective community monitoring and contact tracing.
- *Strain on education system:* Increased pressure on schools and school systems that remain open since school closures place burdens on schools as parents and officials need to redirect children (UNESCO 2020). There could also be a need to help children cope with stress (UNICEF, WHO, and IRC 2020).
- *Strain on healthcare system:* Women often represent a large share of health-care workers and often cannot attend work because of childcare obligations that result from school closures (UNESCO 2020).
- *High economic costs:* See [Question 3](#) for details.

IMPACT ON FAMILIES, CAREGIVERS, AND PARENTS:

- *If schools close:*
 - Parents miss work to watch their children and there is a potential loss of income (Minardi, Hares, and Crawford 2020).
 - Parents are underprepared for distance learning and/or home schooling (UNESCO 2020).
 - Households have unequal access to technology (hardware), the Internet, and digital learning portals (UNICEF, WHO, and IRC 2020)
- *If schools remain open:* There is potential impact on education and schools from the spread of the virus.

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2. Threshold of transmissions in schools: What factors *mitigate* transmission in a school setting?

Adapted from the World Health Organization’s “Framework for measures to reduce transmission” (WHO 2009).

| RECOMMENDATIONS | THINGS TO CONSIDER |
|---|--|
| 1. Plan in advance | <ul style="list-style-type: none"> • Maintaining effective lines of communication between students, parents, and staff. • Coordination of nearby school districts to maintain trust and avoid fear. • Encouraging flexible working conditions for workers who have to care for ill dependents, when possible. |
| 2. Stay away from school while ill (students, teachers, other staff) | <ul style="list-style-type: none"> • This is one of the most important factors. |
| 3. Promote hand hygiene and respiratory etiquette | <ul style="list-style-type: none"> • This requires information/training that can reach a range of age groups with a range of reading and education levels. • Reminding students not to touch their faces. • Obtaining needed supplies: tissues, waste bins, soap and water, alcohol-based hand rubs. |
| 4. Isolate ill students and staff | <ul style="list-style-type: none"> • If someone shows a fever or other symptoms while at school, move the person to a separate room, provide them with a medical mask, and arrange for them to return home or seek medical care. • Supply schools with thermometers to check students and staff for fevers. |
| 5. Maintain proper cleaning and ventilation | <ul style="list-style-type: none"> • Clean surfaces regularly with soap and water or disinfectant. • Keep windows open to allow air flow. |
| 6. Reduce crowding | <ul style="list-style-type: none"> • When possible, avoid situations where large numbers of students are in a confined space, especially if the space has poor ventilation. • If possible, substitute regular large gatherings, (such as lunch periods) for more frequent gatherings involving fewer students. |
| 7. Share relevant public health messages | <ul style="list-style-type: none"> • Children can be effective messengers for public health information. • Teachers provide accurate messages to children, who take them home and repeat to parents and/or other community members. |

Note: This table is adapted from WHO (2009).

ADDITIONAL CONSIDERATIONS

- Plan for continuity in learning, such as distance learning or home schooling.
- Support vulnerable populations.
- Address mental and psychosocial needs of students, staff, and teachers.
- Support prevention and response in refugee settings. UNHCR will implement a wide range of interventions for preventing and responding to COVID-19, building on lessons from influenza outbreaks, Ebola, and other diseases, “such as raising outbreak awareness, improving the water, sanitation and hygiene programmes, rehabilitating basic health infrastructure, developing contingency plans, building isolation wards, stockpiling essential medicines and laboratory tests, and improving infection prevention and drug management, increased surveillance, in conjunction with UNHCR’s Health Information System and operational response” (UNHCR 2010).

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3. Threshold of transmissions in schools: What factors *exacerbate* transmission in a school setting?

Many of the factors that exacerbate in-school transmission are common in many low- and middle-income countries and in conflict- and crisis-affected countries:

- Overcrowded classrooms
- Lack of ventilation in classrooms
- Age of the population that is required to carry out safer behaviors, such as social distancing
- Lack of information regarding disease transmission, resulting in high-risk behaviors
- Insufficient access to clean water, soap, and disinfectant
- Lack of monitoring protocols needed to test and track prevalence and to ensure sick teachers, staff, and students do not attend school

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4. Why do countries consider school closures during pandemics?

School closures represent a form of social distancing and are used as a mechanism to minimize social contact and transmission of disease. There are however economic, educational, and social costs to school closures. The extent of these costs is influenced by the length of the closure and the context in which the closure occurs.

Decisions regarding school closures depend on the severity of the disease and the children's contribution to transmission of the disease (Cauchemez et al. 2014).

School systems can take proactive or reactive school closure decisions. Reactive decisions are those taken after infection has already been detected in the school.

Historic data on past pandemics reflects mixed effects of the benefit of school closings due to the heterogeneity of diseases observed, as well as heterogeneity in the implementation and timing of school closings.

Evidence suggests partial school closures (dismissing certain classes or grades within a school) may help slow the spread of an epidemic almost as much as full closure, while lessening the costs (Minardi, Hares, and Crawford 2020).

The main health benefits to school closure is slowing the spread of outbreak, reducing demand for healthcare (by 30–50 percent at a pandemic's peak), and buying time to prepare and build up vaccines. Cauchemez and colleagues' studies find modest reduction in total cases but large reductions in "peak attack rates." If unchecked, peak attack rates can overwhelm healthcare systems. A CDC report has indicated that public health strategies such as good hygiene, respiratory etiquette, limited travel, and social distancing have been shown to "flatten the curve" of epidemic's effective reproductive growth or spread (CDC 2017).

A review of 79 papers on school closure also finds evidence of a causal relationship between school closures and reduced influenza transmission, though the ideal closure length and timing are still unclear (Jackson et al. 2013).

Timing is critical. School closure has the greatest benefit when schools close early (ideally, before 1 percent of the population gets sick). The impact on the spread of disease is much more limited if schools close too late (WHO 2009). If schools are not closed until 20 percent of children are infected, closures provide little to no benefit.

The duration of the school closure depends on the timing and the severity of the pandemic. According to Lempel, Epstein, and Hammond (2009), "In the event of a Category 2 or 3 pandemic, the CDC recommends that closure of up to 4 weeks be considered. In the event of a Category 4 or 5 pandemic, closure of up to 12 weeks is recommended."

Limiting contact of children when not in school is important to ensure the potential benefits of school closure are not undermined by continuing social contact outside of school. Evidence suggests a high percent of children visit public places during school closures (67 percent in a study from Argentina). This can be a particular issue for older children (Minardi, Hares, and Crawford 2020).

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5. What is the macroeconomic impact of partial or complete school closures?

The main economic cost of school closure is absenteeism as working parents stay home to watch children, leading to wage losses and reductions in productivity. School closures can increase absenteeism in the labor force by 16 percent, in addition to everyday levels of absenteeism and absenteeism from illness (WHO 2009; UNESCO 2020).

Of course, this varies by country and by the structure of the labor force. Are household adults fully employed? Is there informal childcare? Can employed adults work from home? If the answers to these questions are yes, no, and no, then impact of absenteeism will be greater (Lempel, Epstein, and Hammond 2009).

Other factors to consider when gauging economic impact:

- Occupation, gender, and age of the person staying home
- Ability of co-workers to pick up the slack
- Ability of absent workers to make up missed work
- How we value lost production (ibid.)

Most studies focused on the economic impact of school closures are based on OECD countries. For example, the economic costs of absenteeism in the United States under various scenarios are high, ranging from \$5 billion (constant 2008 dollars, or less than 0.1 percent of 2008 gross domestic product) for a 2-week closure to \$141 billion (1 percent of 2008 gross domestic product) for a 12-week closure. In the United Kingdom, estimates are £0.2 billion to £1.2 billion per week (ibid.; Sadique, Adams, and Edmunds 2008).

Other effects of school closures:

- Disruptions to the provision of essential healthcare as doctors and nurses with school-age children stay home, especially women. Estimates of absenteeism range from 6 percent to 19 percent (United States) to 30 percent (United Kingdom) for the healthcare workforce, potentially having an impact on vaccine development and treatment (WHO 2009; Lempel, Epstein, and Hammond 2009; Sadique, Adams, and Edmunds 2008).
- Schools that remain open can be overburdened by children coming from closed schools (UNESCO 2020).

Evidence suggests partial school closures (dismissing certain classes or grades within a school) may help slow the spread of an epidemic almost as much as full closure, while lessening the costs (Minardi, Hares, and Crawford 2020).

The bottom line: The economic costs can be high, but the benefits can be significant if schools are closed early and the epidemic is very serious (Lempel, Epstein, and Hammond 2009).

MICROECONOMIC, EDUCATIONAL, AND SOCIAL IMPACT OF SCHOOL CLOSINGS

- The economic costs of school closures may be significant on an individual family's income due to loss of pay and/or jobs (ibid.).
- Households with only 1 worker are at risk of losing income if that worker has to stay home to watch children. Estimates in the United States found 20 percent of projected absentees come from one-worker households, and most of those are low- or middle-income households (ibid.).
- There is a loss of instructional time for children.
- Negative impacts on children's health and well-being also occur, as school meal programs end and young children are left unsupervised at home, possibly leading to risky behavior (WHO 2009; UNESCO 2020).
- In fragile and conflict-affected environments, school closures can be highly destructive, increasing the risk of child labor, early marriage, sexual exploitation, and recruitment into militias. In Sierra Leone, teenage pregnancies increased by 65 percent due to school closures from Ebola, according to a United Nations Development Programme study (Minardi, Hares, and Crawford 2020).
- It can be a struggle to get children to stay in school after they reopen, especially after long closures, with a negative impact on dropout rates (UNESCO 2020).

LONG-TERM IMPACT OF SCHOOL CLOSINGS

- There are long-term costs as children lose opportunities to learn and develop and lose social interaction with other students (UNESCO 2020). The loss of learning hours due to Ebola-caused school closures have been substantial—486 for Guinea, 582 for Liberia, and 780 for Sierra Leone (Statista Research Department 2015).
- Long-term impacts are particularly acute for disadvantaged children with less access to technology and distance learning and fewer opportunities for education outside of school. Parents with limited education could be unprepared to homeschool children (UNESCO 2020). This could make it harder to close the achievement gap between high- and low-income students (Nuzzo 2020).

UNESCO has produced a list of adverse consequences of school closures on its website (<https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures>).

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6. What are the triggers for school closure?

There are no universally agreed upon triggers. Triggers vary by country and/or locality and by illness. Some examples include:

- The first case(s) of identified students or staff members may result in the closure of that school or grade.
- Cases or outbreaks in neighboring schools or schools where students have shared academic, sports, or other social interaction may also result in closures.
- Identification of a preset number or percentage of schools in a region or country with identified cases may result in regional or country-level closures.

Although some of the above triggers have occurred during the COVID-19 outbreak, schools in several low- and middle-income countries were closed proactively, as a precaution, after fewer than a dozen adults in the country (or region of the country) had confirmed cases. Instances of these proactive closings occurred in India, Lebanon, and Pakistan, and possibly other countries.

School closure policies can be triggered at the local or national level:

- Local reactive school closure policies (closing a single school after transmission is detected at that school) can be risky, because local surveillance may not be effective or prompt and the school may be closed too late.
- National closures are more consistent, and national surveillance/testing is often more accurate and more timely than local surveillance/testing. National closures have a more substantial effect on health, but they have higher social and economic costs.
- For more guidance on school actions, please see the CDC guidance to schools on school closure decisions (CDC 2019).

EXAMPLE OF SCHOOL CLOSURE TRIGGERS IN TAIWAN

- A kindergarten through senior high class is suspended if one teacher or student is confirmed by the Central Epidemic Command Center to have the virus.
- If two or more students are confirmed to have the virus, the school will suspend all classes.
- If one-third of schools in a township/district have to suspend all classes due to the virus, the remaining schools must close as well.
- If a university student or teacher has the virus, all courses taken or taught by the person will be suspended.
- If there are two or more confirmed cases, the university must close its campus.
- Taipei City Government added a 14-day time frame (the school will close if there are two cases confirmed within 14 days of each other) (Hsiao 2020).

SOURCES

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7. In what ways can the impact of school closures be mitigated?

As noted above, it is possible to close only a part of a school; for example, working up the chain by closing classes, grades, and then entire schools as more students are sick or absent. School closures can be stratified by student age or other factors (Minardi, Hares, and Crawford 2020).

Distance learning via radio, smartphones, tablets, and computers can minimize the loss of instructional time:

- UNESCO (n.d.-a) recommends the use of distance learning programs to limit the disruption of education.
- A number of countries that have closed schools have implemented responses to continue to support learning, such as virtual classrooms accessible by smartphones and computers, classes provided on television, dedicated YouTube channels for video lessons, and apps (UNESCO n.d.-b).
- Lessons learned from the Ebola crises and China's experience with COVID-19 regarding distance learning options should be considered when formulating recommendations, if distance learning options become necessary.

Childcare arrangements for children whose parents are healthcare workers can mitigate the impact of closure on the healthcare sector.

If school closures are deemed necessary, instituting them early, when prevalence rates are extremely low, can help contain the spread of disease and, hopefully, minimize the duration of school closures.

SOURCES

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UNESCO. N.d.-a "Distance learning solutions to mitigate COVID-19 school closures." United Nations Educational, Scientific and Cultural Organization (UNESCO).

<https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures/solutions>

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8. How can schools be kept open in a safe way?

In addition to the following, please see [Question 2](#):

- Schools should institute good hygiene habits among students, teachers, other staff, and community members. During the 2014 Ebola epidemic, for example, the Nigerian government “trained at least two staff in every school to detect and manage Ebola cases” (Minardi, Hares, and Crawford 2020).
- Commonly touched surfaces and objects need to be cleaned at least one time per day.
- Clean water, sanitation, and hygiene (“WASH”) facilities need to be available to students and staff.
- Schools should institute social distancing procedures.
- Schools should monitor the health of teachers and students to help reduce the occurrence of positive cases at the school.
- To reduce transmission in school and increase families’ willingness to send kids back to school after any needed closure, schools need to be seen as being well equipped to handle proper in-school hygiene practices. In Sierra Leone, “the government’s strategy to thoroughly clean the schools and implement strict hygiene practices was essential for giving parents the confidence to send their children back. The government distributed thermometers, soap, Veronica buckets (handwashing stations), chlorine, and gloves, and trained teachers in the protocol for handling suspected Ebola cases” (Powers 2016).

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