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Severe Global Impact of Covid-19 on Education

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ABSTRACT: The COVID-19 pandemic affected educational systems worldwide. Most governments decided to temporarily close educational institutions in an attempt to reduce the spread of COVID-19.^{[1][2]} As of 12 January 2021, approximately 825 million learners were affected due to school closures in response to the pandemic. The number of cases of COVID-19 started to rise in March 2020 and educational institutions and universities remained closed. Globally, the education of almost 75 million children and young people was interrupted.^[3] According to UNICEF monitoring, 23 countries at one time implemented nationwide closures and 40 had local closures, impacting about 47 percent of the world's student population. 112 countries' schools were open.^[4]

KEYWORDS: Covid-19, impact, education, global, pandemic, childhood, schools, colleges, resources, internet

I. INTRODUCTION

Efforts to slow the spread of COVID-19 through non-pharmaceutical interventions and preventive measures such as social-distancing and self-isolation have prompted the widespread closure of primary, secondary, and tertiary schooling in over 100 countries.^[24]

Previous outbreaks of infectious diseases have prompted widespread school closings around the world, with varying levels of effectiveness.^{[25][26][27]} Mathematical models have shown that transmission may be delayed by closing schools.^[28] However, effectiveness depends on the contacts children maintain outside of school.^{[29][30]} School closures appear effective in decreasing cases and deaths, particularly when enacted promptly.^[31] If school closures occur late relative to an outbreak, they are less effective and may not have any impact at all.^{[25][26]} Additionally, in some cases, the reopening of schools after a period of closure has resulted in increased infection rates.^[32] As closures tend to occur concurrently with other interventions such as public gathering bans, it can be difficult to measure the specific impact of school closures.^[32]

During the 1918–1919 influenza pandemic in the United States, school closures and public gathering bans were associated with lower total mortality rates.^[26] Cities that implemented such interventions earlier had greater delays in reaching peak mortality rates.^{[33][32]} Schools closed for a median duration of 4 weeks according to a study of 43 US cities' response to the Spanish Flu.^[33] School closures were shown to reduce morbidity from the Asian flu by 90% during the 1957–58 outbreak,^[34] and up to 50% in controlling influenza in the US, 2004–2008.^[35]

Multiple countries successfully slowed the spread of infection through school closures during the 2009 H1N1 Flu pandemic. School closures in the city of Oita, Japan, were found to have successfully decreased the number of infected students at the peak of infection; however closing schools was not found to have significantly decreased the total number of infected students.^[36] Mandatory school closures and other social distancing measures were associated with a 29% to 37% reduction in influenza transmission rates.^[37] Early school closures in the United States delayed the peak of the 2009 H1N1 Flu pandemic.^[25] Despite the overall success of closing schools, a study of school closures in Michigan found that "district level reactive school closures were ineffective."^[38]

For schools and childcare facilities, the U.S. Centers for Disease Control and Prevention recommends short-term closure to clean or disinfect if an infected person has been in a school building regardless of community spread. When there is minimal to moderate community transmission, social distancing strategies can be implemented such as postponing or cancelling field trips, assemblies, and other large gatherings such as physical education or choir classes or meals in a cafeteria, increasing the space between desks, staggering arrival and dismissal times, limiting nonessential visitors, and using a separate health office location for children with flu-like symptoms. When there is substantial transmission in the local community, in addition to social distancing strategies, extended school dismissals may be considered.^[41]

As the pandemic progresses, schools may continue with remote learning or decide to reopen. Strategies such as cohorting, rotating schedules, eating lunch in the classroom, and utilizing outdoor spaces are some ways to minimize



close contact.^[42] Additional precautions include face masks, hand sanitizer stations, rearranging classrooms to enable physical distancing, and frequent cleaning.^[43] The CDC made a School Decision Tree to aid administrators in the planning process for reopening.^[44] The American Academy of Pediatrics urges re-entry policies need to be flexible and responsive as new information about the virus emerges.^[45]

The National Academies of Sciences, Engineering, and Medicine states that in-person instruction for grades K-5 and students with special needs should be prioritized to prevent children from falling behind.^[43] Younger children are at higher risk of suffering from long-term academic consequences and developmental deficits without in-person learning.^{[43][46]}

II. DISCUSSION

The impact on academic integrity has been observed around the world.^{[47][48][49][50][51]} A rise in contract cheating, academic file-sharing, and exam cheating^[52] were identified as particularly problematic.^[53] With remote learning, cheating has become far easier for students.^[54] There is no remorse from students who would rather succeed in class than learn.^[55] Online education has also exposed various as yet unresolved legal issues, including copyright and unapproved misuse of lectures.^[56]

Many institutions turned to commercial services to take over exam proctoring,^{[57][58]} but almost immediately concerns were raised^[59] about student privacy,^[60] surveillance,^[61] and the impact on student mental health.^{[9][62][63]}

The lack of student to teacher interaction also led students to feel less passionate about the integrity of their work. Students turned in half-completed assignments, got the answers from friends in class, or turned in nothing at all simply because education became less important due to COVID-19.^{[64][65][66]}

The COVID-19 pandemic has widened the gender gap in education between females and males. The rapid spread of COVID-19 forced many females into the traditional roles as caretakers. Common gender disparities that impact a female's education during the pandemic are finances enabling higher dropout rates, domestic violence, child marriage, early pregnancy, and exploitation of child labor.^[67] Female caretakers drop out of schools to provide care for sick family members and/or become a source of income for their families. In settings with gender disparities in rates of school completion, girls are at increased risk of not returning to school after lockdown if tasked with income-generating activities or caretaking or they become pregnant.^[68] There is a correlation between increased unemployment rates with higher female school dropout rates. Malala Fund research estimates that as a result of the pandemic, 20 million girls in developing countries may never return to the classroom.^[69]

The COVID-19 pandemic has had a considerable impact on female education. Female education relates to the unequal social norms and the specific forms of discrimination that girls face. In 2018, 130 million girls worldwide were out of school, and only two out of three girls were enrolled in secondary education. The COVID-19 pandemic may further widen the gaps and threatens to disrupt the education of more than 11 million girls. In addition, girls are less likely to have access to the Internet and online learning.^[72]

III. RESULTS

The impact of COVID-19 on racial disparities in online learning during the pandemic has received research attention.^[73] A recent study from the Urban Institute covers some of these findings. Urban's study points to issues in access to a computer and internet. A 2018 survey of households showed that 48% of surveyed households of Alaskan Natives did not have access to computers compared to 35% of Black households, 35% Latino, and 19% White.^[73] Minimal access to computers and the internet was found in 1.3 to 1.4 times as many Black and Hispanic households with school-aged children as it was in white households, with more than two out of five low-income households having just limited access.^[74]

A 2021 report from the Black Education Research Collective analyzes the impact of COVID-19 pandemic on Black education. It evaluates how Black students, parents, educators and community members experience systemic racism during COVID.^[75] The study seeks to show how the pandemic has interrupted education across the country, highlighting existing racial and economic inequities. The study also argues that even before the outbreak, students in vulnerable neighborhoods, primarily Black, Indigenous, and other majority-minority areas, faced disparities in everything from resources (ranging from books to counselors) to student-teacher ratios and extracurricular activities.^[76]

School closures in response to the COVID-19 pandemic have shed a light on numerous issues affecting access to education, as well as broader socio-economic issues.^[24] As of 12 March, more than 370 million children and youth are not attending school because of temporary or indefinite country wide school closures mandated by governments in an



attempt to slow the spread of COVID-19.^{[24][197][198]} As of 29 March, nearly 90% of the world's learners were impacted by closures.^[24]

According to the United Nations International Children's Fund (UNICEF), the COVID-19 pandemic has affected more than 91% of students worldwide, with approximately 1.6 billion children and youngsters unable to attend physical schools due to temporary closures and lockdowns.^[199]

Even when school closures are temporary, it carries high social and economic costs. The disruptions they cause affect people across communities, but their impact is more severe for disadvantaged children and their families including interrupted learning, compromised nutrition, childcare problems and consequent economic cost to families who cannot work.^{[24][200]} According to Studi Economici Dell'Ocse (OECD) studies, school performance hinges critically on maintaining close relationships with teachers.^[201] This is particularly true for students from disadvantaged backgrounds, who may not have the parental support needed to learn on their own.^[202] Working parents are more likely to miss work when schools close in order to take care of their children, incurring wage loss in many instances and negatively impacting productivity.^[7] Localised school closures place burdens on schools as parents and officials redirect children to schools that are open.^[7]

It is also highly likely that the COVID-19 pandemic and school closures will further exacerbate the learning crisis occurring across the globe.

Women make up almost 70% of the healthcare workforce, exposing them to a greater risk of infection.^[203] They often cannot attend work because of childcare obligations that result from school closures. In fact, in the U.S., the healthcare sector has one of the highest rates of childcare obligations in the broader economy, with approximately 28.8% of the workforce responsible for providing care to children aged 3–12.^[204] At best, this means that school closures put pressure on health workers in systems already strained by COVID-19 caseloads. At worst, this means that some medical professionals may miss work at health facilities altogether.^[7]

Online learning has become a critical lifeline for education, as institutions seek to minimize the potential for community transmission.^{[2][205]} Technology can enable teachers and students to access specialized materials well beyond textbooks, in multiple formats and in ways that can bridge time and space.^[202] Digital media in education can take many forms, including high-tech solutions such as tablet-based adaptive learning software or low-tech solutions such as radio, sms, and instructional television.^{[206][207]} Teachers may operate in dual mode, teaching local and remote learners simultaneously.^{[208][209]}

Due to the COVID-19 pandemic, many schools across the world began conducting classes via videotelephony software such as Zoom, Google Classroom and/or Google Meet. The Organisation for Economic Co-operation and Development has created a framework to guide an education response to the COVID-19 pandemic for distance learning.^[210] Whenever this was possible, the ability to teach in real time significantly helped educators handle the transition, in comparison with their colleagues who had to rely on asynchronous instruction.^[211]

Some online learning solutions like Coursera expanded their accessibility by offering more free online courses during the pandemic.

UNESCO made ten recommendations for engaging in online learning:

1. Examine the readiness and choose the most relevant tools: Decide on the use high-technology and low-technology solutions based on the reliability of local power supplies, internet connectivity, and digital skills of teachers and students. This could range through integrated digital learning platforms, video lessons, MOOCs, to broadcasting through radios and TVs.
2. Ensure inclusion of the distance learning programmes: Implement measures to ensure that students including those with disabilities or from low-income backgrounds have access to distance learning programmes, if only a limited number of them have access to digital devices. Consider temporarily decentralising such devices from computer labs to families and support them with internet connectivity.
3. Protect data privacy and data security: Assess data security when uploading data or educational resources to web spaces, as well as when sharing them with other organisations or individuals. Ensure that the use of applications and platforms does not violate students' data privacy.
4. Prioritize solutions to address psychosocial challenges before teaching: Mobilize available tools to connect schools, parents, teachers, and students with each other. Create communities to ensure regular human



interactions, enable social caring measures, and address possible psychosocial challenges that students may face when they are isolated.

5. Plan the study schedule of the distance learning programmes: Organise discussions with stakeholders to examine the possible duration of school closures and decide whether the distance learning programme should focus on teaching new knowledge or enhance students' knowledge of prior lessons. Plan the schedule depending on the situation of the affected zones, level of studies, needs of students needs, and availability of parents. Choose the appropriate learning methodologies based on the status of school closures and home-based quarantines. Avoid learning methodologies that require face-to-face communication.
6. Provide support to teachers and parents on the use of digital tools: Organise brief training or orientation sessions for teachers and parents as well, if monitoring and facilitation are needed. Help teachers to prepare the basic settings such as solutions to the use of internet data if they are required to provide live streaming of lessons.
7. Blend appropriate approaches and limit the number of applications and platforms: Blend tools or media that are available for most students, both for synchronous communication and lessons, and for asynchronous learning. Avoid overloading students and parents by asking them to download and test too many applications or platforms.
8. Develop distance learning rules and monitor students' learning process: Define the rules with parents and students on distance learning. Design formative questions, tests, or exercises to monitor closely students' learning process. Try to use tools to support submission of students' feedback and avoid overloading parents by requesting them to scan and send students' feedback
9. Define the duration of distance learning units based on students' self-regulation skills: Keep a coherent timing according to the level of the students' self-regulation and metacognitive abilities especially for livestreaming classes. Preferably, the unit for primary school students should not be more than 20 minutes, and no longer than 40 minutes for secondary school students.
10. Create communities and enhance connection: Create communities of teachers, parents, and school managers to address sense of loneliness or helplessness, facilitate sharing of experience and discussion on coping strategies when facing learning difficulties.^[304]

IV. CONCLUSIONS

With schools closed, demand for online education platforms has increased.^[312] Coursera, which can be taught online, also grew significantly during the pandemic.^[312]

- Coursera saw 59% revenue growth year over year, largely due to a pandemic-induced boom in digital learning.^[313]
- Total registered users in 2020 grew 65% over 2019.^[313]
- During the pandemic, Coursera also has partnered with more than 330 government agencies across 70 countries and 30 US states and cities as part of the Coursera Workforce Recovery Initiative, which helps governments offer unemployed workers free access to thousands of courses for business, technology and data science skills from companies including Amazon and Google.^[313]

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