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Changing Education System during COVID-19 Pandemic

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Abstract

The 2019-20 corona virus has affected educational systems worldwide, leading to the near-total closures of schools, universities and colleges. At the middle of April 2020, approximately 1.723 billion learners have been affected due to school closures in response to the pandemic. According to UNESCO monitoring, 191 countries have implemented nationwide closures and 5 have implemented local closures, impacting about 98.4 percent of the world's student population. School closures impact not only students, teachers, and families, but have far-reaching economic and social consequences. School closures in response to COVID-19 have shed light on various issues including student debt, digital learning, food insecurity, and homelessness, as well as access to childcare, health care, housing, internet, and disability services. The objective of the study was to assess the adoption rate for virtual classes and to determine the various benefits, challenges, and reason for non-adoption of virtual classes. In response to school closures, universities recommended the use of distance learning programs and open educational applications and platforms that schools and teachers can use to reach learners remotely and limit the disruption of education.

Keywords: COVID-19, teaching learning process, virtual classes, impact on learning.

Introduction

Efforts to stem 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.¹ Previous outbreaks of infectious diseases have prompted widespread school closings around the world, with varying levels of effectiveness.² Mathematical modelling has shown that transmission of an outbreak may be delayed by closing schools. However, effectiveness depends on the contacts children maintain outside of school.³ School closures may be effective when enacted promptly. If school closures occur late relative to an outbreak, they are less effective and may not have any impact at all.⁴ 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.⁵ During the 1918-1919 influenza pandemic in the United States, school closures and public gathering bans were associated with lower total mortality rates.⁶ Cities that implemented such interventions earlier had greater delays in reaching peak mortality rates.⁸ Schools closed for a median duration of 4 weeks according to a study of 43 US cities' response to the Spanish Flu.¹⁰ School closures were shown to reduce morbidity from the Asian flu by 90% during the 1957–58 outbreak,¹⁸ and up to 50% in controlling influenza in the US, 2004–2008.¹⁷ Early school closures in the United States delayed the peak of the 2009 H1N1 Flu pandemic¹². Despite the overall success of closing

schools, a study of school closures in Michigan found that "district level reactive school closures were ineffective"¹¹ During the swine flu outbreak in 2009 in the UK, in an article titled "Closure of schools during an influenza pandemic" a group of epidemiologists endorsed the closure of schools in order to interrupt the course of the infection, slow further spread and buy time to research and produce a vaccine.¹⁴ 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.¹¹ 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. Localised school closures place burdens on schools as parents and officials redirect children to schools that are open.

Distance learning

In response to the pandemic, many schools moved to online distance learning via platforms like Zoom.

1.Threshold concepts

Characteristics of a threshold concept:

1. Transformative
2. Integrative
3. Troublesome
4. Irreversible

Threshold knowledge is a term in the study of higher education used to describe core concepts or threshold concepts which once understood, transform perception of a given subject, phenomenon, or experience²¹.

2.Unequal access to technology

Lack of access to technology or fast, reliable internet access can prevent students in rural areas and from disadvantaged families. Lack of access to technology or good internet connectivity is an obstacle to continued learning, especially for students from disadvantaged families. In response to school closures caused by COVID-19, Universities recommends the use of distance learning programs and open platforms that schools and teachers can use to reach learners remotely and limit the disruption of education¹⁹. To aid in slowing the transmission of COVID-19, hundreds of libraries have temporarily closed. For students without internet at home, this increases the difficulty of keeping up with distance learning.

3.Unequal Access to Educational Resources

Lack of limitations and exceptions to copyright can also have an impact on the ability of students to access the textbooks and materials they need to study. Several initiatives were taken to grant that students and teachers can have access to open educational resources, or understand copyright limitations. The International Council for open and Distance Education issued a special website to provide webinars, tips for online teaching and resources for

teachers. In New Zealand a group of publishers agreed to allow for virtual public readings of their materials from libraries and classrooms. An advocacy organization in Netherlands launched a website to allow teachers use free-licensed music and video for their classes. The Maricopa Millions OER Project launched a special emergency fund for building open educational resources. Several organizations are also working to explain to teachers how to navigate copyright complex scenarios.

4.Childcare

School closures puts a strain on parents and guardians to provide childcare and manage distance learning while children are out of school. In the absence of alternative options, working parents often leave children alone when schools close and this can lead to risky behaviours, including increased influence of peer pressure and substance abuse.

5.Nutrition and food insecurity

Nutrition plays a critical role in cognitive development and academic performance for children. Many children worldwide rely on free or discounted meals at schools. When schools close, nutrition is especially compromised for children in schools where food is provided. In the United States, school lunch programs are the second-biggest anti-hunger initiative after food stamps. Every year, nearly 30 million children rely on schools to provide free or low-cost meals including breakfast, lunch, snacks, and even dinner. In Washington State, around 45% of the state's 1.1 million students enrolled in traditional public and charter schools qualify for subsidised school meals. At least 520,000 students and their families may be affected by food insecurity as a result of school closures.

6.Student learning outcomes

School closures negatively impact student learning outcomes. Schooling provides essential learning and when schools close, children and youth are deprived opportunities for growth and development. The disadvantages are disproportionate for under-privileged learners who tend to have fewer educational opportunities beyond school. When schools close, parents are often asked to facilitate the learning of children at home and can struggle to perform this task. This is especially true for parents with limited education and resources. Student drop-out rates tend to increase as an effect of school closures due to the challenge of ensuring all students return to school once school closures ends. This is especially true of protracted closures. Disadvantaged, at-risk, or homeless children are more likely not to return to school after the closures are ended, and the effect will often be a life-long disadvantage from lost opportunities. Schools are also hubs of social activity and human interaction. When schools are closed, many children and youth miss out of on social contact that is essential to learning and development.

7.Impact on formal education

Formal education — as opposed to informal education or non-formal education— tends to refer to schools, colleges, universities and training institutions. A 1974 report by the World Bank defined formal education as the following: the hierarchically structured, chronologically graded 'education system', running from primary school through the

university and including, in addition to general academic studies, a variety of specialized programs and institutions for full-time technical and professional training. The majority of data collected on the number of students and learners impacted by COVID-19 has been calculated based on the closure of formal education systems. The UNESCO Institute for Statistics provides figures on students impacted by COVID-19 corresponding to the number of learners enrolled at pre-primary, primary, lower-secondary, and upper-secondary levels of education ISCED levels 0 to 3, as well as at tertiary education levels.

8.1 Early childhood education

Early childhood educational programs are usually designed for children below the age of 3 and may refer to preschools, nursery schools, kindergarten, and some day care programs. While many primary and secondary schools have closed around the world due to COVID-19, measures impacting early childhood educational programs have varied. In some countries and territories, preschools and day cares are considered necessary services and have not closed in tandem with broader school closure measures. Washington State and California have left it to the discretion of care providers. California Governor Gavin Newsom explained his state's position, saying "We need our child care facilities, our daycare centers, to operate to absorb the impact of these school closures."

8.2 Primary

Primary or elementary education typically consists of the first four to seven years of formal education. Primary students are also affected very much as this is the base of learning age of kids, and the schools are shut down at this time. So, the learning of the kids is affected a lot.

8.3 Secondary

A sign on a closed local school because of the corona virus. The International Baccalaureate Organization (IBO) cancelled the examinations for its Diploma Programme and Career-related programme scheduled between 30 April and 22 May 2020, reportedly affecting more than 200,000 students worldwide. The IBO stated that it would award candidates their diplomas and certificates based on "their coursework" and "the established assessment expertise, rigor, and quality control already built into the programme."

8.4 Tertiary (Higher)

Tertiary education, also known as higher education, refers to the non-compulsory educational levels that follow completion of secondary school or high school. Tertiary education is normally taken to include undergraduate and postgraduate education, as well as vocational education and training. Individuals who complete tertiary education generally receive certificates, diplomas, or academic degrees.

8.5 Undergraduate education

Undergraduate education is education conducted after secondary education and prior to

post-graduate education, for which the learner is typically awarded a bachelor's degree. Students enrolled in higher education programs at colleges, universities, and community colleges are often referred to as "college students" in countries. The closure of colleges and universities has widespread implications for students, faculty, administrators, and the institutions themselves. Colleges and universities across the United States have been called upon to issue refunds to students for the cost of tuition and room and board.

Recommended Alternatives

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. Ensure inclusion of the distance learning programs, implement measures to ensure that students including those with disabilities or from low-income backgrounds have access to distance learning programs, 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.

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.

Avoid learning methodologies that require face-to-face communication: 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.

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.

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.

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 meta cognitive abilities especially for live streaming classes. Preferably, the unit for primary school students should not be more than 2 hours, and no longer than 4 hours for secondary school students. 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.

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