

*From Response to Resilience:
Preparing for the use of Open and Distance Learning in the Next Crisis*

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Abstract

Governments and educational institutions should not let the emergency responses that they developed to cope with the COVID-19 crisis go to waste. The Commonwealth of Learning has issued a report to Commonwealth Education Ministers with recommendations about how to make their education systems more resilient and readier to cope with future disruptions of all kinds (Kanwar & Daniel, 2020). The present paper presents the highlights of this report with a particular focus on open learning and notes the favourable situation in India. We address the changes needed to make systems more resilient from four perspectives: social, pedagogical, technological and psychological. The challenge of responding to COVID-19 has reminded authorities to take a broad view of their educational systems. Ensuring that emergency measures taken in a crisis do not exacerbate existing inequalities among students is as important as modifying curricula and harnessing technology for teaching and learning. Finally, reassuring anxious students and families is a vital task for institutions and governments.

Introduction

The COVID-19 pandemic had a global impact on education. Closures of schools and colleges took 90% of the world's students out of their classrooms. Provisions for them to continue studying at home varied widely in both approach and success. Except where national systems had previously coped with epidemics like SARs or Ebola, countries had to scramble to address the COVID-19 pandemic. However, the experience of previous crises indicates that, unless special efforts are made to build resilience for the future, the lessons of COVID-19 will soon be forgotten (Fox, 2004; Johnson & Ronan, 2014).

Every country hopes that the first wave of COVID-19 will not lead to further spikes of infection that require institutions to be closed again. But COVID-19 is not the only disruption that the world and individual countries will face in the future. As well as further epidemics, climate change will affect all countries, albeit differently. Some parts of the planet will become inhospitable for human settlements. As mean temperatures rise, tropical cyclones will become more extreme – though perhaps less frequent. India had the misfortune to experience a major cyclone alongside COVID-19.

Disruptions like that can be expected at the local level. The expansion of ocean water in a warming world, combined with increased meltwater from glaciers and the breakdown of polar ice sheets, is already producing a one centimetre rise in sea levels every three years – a figure that could increase sharply were these ice sheets to collapse. This will disrupt life in

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coastal regions, just as droughts and wildfires will likely become more frequent in drier areas. Added to this are the threats of civil war and terrorism, with which some countries are already all too familiar, and the challenges of mass migrations, which also complicated India's response to COVID-19.

How can governments build educational systems that are resistant to disasters? They should make them permanently more resilient to shocks in two ways. First, by rendering educational systems less susceptible to disruptions of all kinds. Analogous to the cybernetic Principle of Requisite Variety, this means having systems ready with responses for the crises most likely to confront them (Naughton, 2017). Second, by having coordinating mechanisms in place among the components of educational systems to mitigate the impact of a crisis more effectively than occurred with COVID-19, where some responses were described as a 'free for all'.

We review the follow-up required from four perspectives: social, pedagogical, technological and psychological (Mahajan, 2020). The challenge of trying to manage the impact of COVID-19 has reminded authorities to take a holistic view of their education systems. Ensuring that emergency measures do not exacerbate existing inequalities among pupils is as important as modifying curricula to support home schooling and harnessing technology for teaching and learning. Finally, reassuring anxious students and parents is a vital task for institutions and governments (Daniel, 2020).

Social issues: combatting inequalities

The increasing inequalities among countries and within the populations of individual nations are a major challenge of our times. Education is the most powerful tool that governments can use to counter inequality, promote social mobility and widen opportunities. The OECD's Programme for International Student Assessment (PISA), which has reached three million students in 90 countries so far this century, measures 15-year-olds' ability to use their reading, mathematics and science knowledge and skills to meet real-life challenges (PISA, 2018). PISA reports the performance scores in each jurisdiction and also their spread. In general, countries with higher median scores also have lower spreads between the top and bottom performers. High achieving school systems are, therefore, also better at countering inequalities.

Strongly performing systems usually invest equitably in rich and poor areas alike, sometimes adding extra support in disadvantaged regions. But, as well as an equitable school system, countries can extend the notion of equal access and create reservoirs of resilience, which they can tap into during crises, by having open and distance learning (ODL) arrangements already in place.

The establishment of the Open University (OUUK) in the United Kingdom in 1969 was a historic moment in the democratisation of higher education. Lord Crowther, the founding chancellor, stated that the mission of the Open University was to be open to people, to places, to methods and to ideas, throwing open the ivory towers (Crowther, 1969). Its aim was to promote social justice by providing a second chance to those who had missed the opportunity of higher education earlier. Its relevance was quickly recognised worldwide and today there

are 30 other open universities in the Commonwealth catering to over four million learners every year (COL, 2017). India alone counts 13 state open universities and a national open university (MHRD-India, 2020).

Open schooling, which is secondary education offered at a distance, is a cost-effective means of reaching learners who would otherwise not have the opportunity. India has the world's largest open school with a cumulative enrolment of 2.71 million pupils and thousands of study centres across the country (NIOS, 2020). Millions of students and pupils are enrolled in these open universities and open schools around the world. Distance education has become the preferred mode of study for working people with family responsibilities (Tait, 2018), women and girls (Kanwar & Taplin, 2001), and people with disabilities (UNESCO, 2016).

The curricular variety and reach of open universities and open schools have been greatly enhanced by the movement to make educational materials freely available as Open Educational Resources (OER) that anyone can copy, use or modify (UNESCO, 2020).

Countries set up ODL systems (open universities, open schools and repositories of OER) with the declared aim of making access to quality education more equal. It is ironic, therefore, that the scramble by schools and universities to move off campus and online in response to COVID-19, has widened inequalities of educational opportunity rather than reduced them. Educated middle class parents with laptops and Internet access can readily support their children to learn at home; whereas poorer parents with none of these advantages – as well as anxieties about their own finances – can give little help.

Commonwealth countries have reaped system-wide benefits from their ODL systems in past crises. When a polio epidemic struck New Zealand in 1948 all schools were closed and the Correspondence School prepared lessons to be sent to every home in the country, as well as radio broadcasting lessons from January to mid-April. In the same spirit, during the COVID-19 pandemic, New Zealand's Open Polytechnic made its iQualify online learning platform available free-of-charge to 20 other tertiary education organisations to help them convert to online teaching during the lockdown period (Open Polytechnic, 2020). When Botswana closed its schools in 2011 because of a teachers' strike the nation's established open schooling network, BOCODOL (now Botswana Open University), responded immediately so that pupils could continue to learn at home. When Cyclone Gita devastated the Kingdom of Tonga, the Aptus device, created by the Commonwealth of Learning, was loaded with secondary school content to provide a 'classroom without walls' where learners could access digital materials without electricity or Internet (COL, 2018).

It is not enough, of course, to have elements of an ODL infrastructure in place. Resilience requires that there also be a coordination mechanism to expand and optimise its benefits in a crisis. India has a particularly rich network of open schools, open universities and dual-mode institutions. There is also a government-sponsored network, Swayam Prabha, to bridge the digital divide for people who have been untouched by the IT revolution and therefore outside the knowledge economy. Governments should create coordination mechanisms to harness these resources in support of the whole education system when crises occur.

Pedagogy: flexible teaching and learning

Teaching-learning systems

A resilient education system must be ready for situations when teaching and learning has to be carried out under new circumstances. Designing such a system must recognise that teaching and learning have two essential components (Daniel & Marquis, 1979). The first is an interactive component where teacher and student communicate directly and simultaneously. In such exchanges, whether in the classroom or by telecommunications, students' questions can be addressed immediately and teachers can usually gauge how well they are learning. But, second, there is also an independent component. Here students study or prepare material, suggested by the teacher – or determined by themselves – in their own time. All approaches to education have these two components, whether the framework around them is a campus with classrooms or people studying at home.

A resilient system has to blend the interactive and independent components of education in different ways according to circumstances: educators must be aware of the strengths and weaknesses of each component. During COVID-19, when institutions had to start operating at a distance in matter of days, most had no time to prepare materials for independent learning. They simply tried to move the interactive classroom experience online. Preparing for resilience means investing in quality learning materials, either developed in-house or chosen from among the variety of OER available from many sources. Having such materials ready, whether as part of normal campus teaching or for emergency off campus moves, has two significant advantages.

First, learners and teachers do not have to communicate simultaneously. Asynchronous working gives teachers flexibility in preparing learning materials and enables students to juggle the demands of home and study. Teachers do not need to deliver material at a fixed time: it can be distributed as print or posted online for on-demand access and students can engage with it when it suits them. Teachers can check on students' participation periodically and make online appointments for students with particular needs or questions. Having a pool of asynchronous learning materials gives teachers and students more room to breathe. Asynchronous learning works best if prepared in digital formats, even if some students use printed versions of the material.

Second, an education system that invests in materials for asynchronous use also gains economic advantages, because they can be reproduced at little cost and used many times. These economies of scale explain why open schools and open universities can handle large enrolments. Once learning materials are available, the cost per additional student for the independent component of their studies is low. While the cost of providing the interactive component of education through telecommunications or local study centres is more sensitive to student numbers than the independent component, the combination of the two is cost-effective. It is also educationally effective.

The importance of access to learning materials cannot be over-emphasised. Research shows that access to textbooks is effective in improving learning, increasing literacy scores by 5-20% (Fehrler, Michaelowa, & Wechtler, 2009). Meta-analysis of research on the three types of interactions (student-content, student-teacher and student-student) that occur in distance education shows that, while all three types of interactions are associated with increasing

achievement outcomes, student-content interaction is the most important. Asynchronous distance education has strong association with learner achievement (Bernard et al., 2009).

Curricula

What are the curricular implications of creating a resilient education system? The response depends on the jurisdiction. Some have prescriptive national curricula and have identified quality content mapped to these curricula to support teachers. In other jurisdictions teachers have wide discretion to choose programme content. General advice is for teachers to keep two objectives in mind. While it is important, during crises, to continue to orient students' learning to the formal curriculum and the assessments/examinations for which they were preparing, it is also vital to maintain students' interest in learning by giving them varied assignments. For example, through project work that sets the reason for the upheaval in the education system in a wider global and historical context. For such enrichment, teachers can draw on the abundance of high-quality learning material now available as freely usable OER. The OpenLearn website, for example contains over 1,000 courses at both school and tertiary level (OpenLearn, 2020). There is no dishonour in teaching through good materials prepared by others. At a practical level, some institutions encourage students to engage with victims of the crisis by preparing hampers of food and supplies for vulnerable families.

Assessment

How can states make assessment systems more resilient? In the COVID-19 crisis, examination systems did not prove to be very resilient. End-of-year examinations were cancelled or suspended by many examining bodies (e.g. the International Baccalaureate Organisation) and universities. This left millions of students, even those who do not relish examinations, feeling left in the lurch.

Institutions specialising in distance learning often start the process of course construction by designing the student assessments that will be part of it. Clarifying learning objectives and content upfront in this way makes an education system more resilient. Teachers faced with the possibility of a sudden transition to remote operation should consider adopting it.

Well before the outbreak of the COVID-19 pandemic, many teachers and institutions were starting to think differently about assessment. They are coming to conceive it as a continuous rather than an occasional process, a collaborative activity focusing on verifying knowledge, competence and capabilities rather than on judging the status of individual students within a group of learners. The role of assessment is experiencing a renaissance as educators explore ways in which authentic assessment and feedback can be used to enable learning. By making the invigilated examinations that feature in traditional approaches difficult, if not impossible, COVID-19 gave further impetus to thinking about new methods of assessment. Contact North has provided a list of various ways in which assessment is changing that might increase system resilience (Contact North, 2020).

Technology for teaching and learning

The COVID-19 crisis has highlighted, once again, the uneven development of technology across the world. While only about 50% of the global population has access to the Internet, the percentage is even lower in Asia (40%), Africa (33%) and the Pacific (33%). Access to

mobile subscriptions is much higher, exceeding 100% in all Commonwealth regions except the Pacific. This presents an opportunity to build a system of teaching and learning that is cloud based and mobile friendly supported with other affordable and accessible technologies.

As they reacted to COVID-19, countries used a variety of technologies to take education out of the classrooms and into the students' homes (Kanwar & Daniel, 2020). Once the challenge of responding to COVID-19 recedes, countries will doubtless assess the effectiveness of the technologies that they used. This could be the basis for developing more resilient educational ecosystems for the future.

For example, since 2009, the Government of India has invested systematically in information and communications technology (ICT) for education in both schools and higher education. As a result, India now has a robust ICT in education policy at the school level. It supports increased access to ICTs, digital content and teacher capacity building, as well as a national OER repository (NROER, 2020), a MOOC platform (SWAYAM, 2020), and a bouquet of dedicated television channels for education available via Swayam Prabha providing access to digital content to both teachers and learners (SWAYAM PRABHA, 2020). However, optimal use of these systems during a crisis requires a coordinated approach with a centralised mechanism for deploying resources and monitoring progress. The challenge is to pool the resources of these organisations in time of crisis while letting them fulfil their regular missions in normal times.

In developing country-specific strategies for resilience, we recommend the following:

- Use educational radio in a planned manner to support teaching at the school level and involve parents in the teaching and learning process.
- Establish dedicated TV channels for education, especially for teacher capacity building and for providing curriculum-based support at the national level.
- Set up national digital content platforms to provide quality OER mapped to the curriculum.
- Use cloud-based online learning platforms accessible via mobile phones.
- Providing financial support to access mobile devices for learning, especially for the disadvantaged, including for girls and persons with disabilities.

Cyber security is an issue during crises, because hackers and cyber criminals thrive in chaotic situations. Computers and mobile devices used by children should be updated with virus protection and age-appropriate filtering tools. We must prepare parents to support children to continue to learn during any crisis.

Psychology: be prepared

A study on teachers' responses to the 2011 Christchurch earthquake in New Zealand revealed the important role played by teachers in post-disaster recovery, particularly for providing emotional support to children and communities (Johnson, & Ronan, 2014). The lockdowns occasioned by COVID-19 have created enormous stress on teachers, students and parents. Incidences of child abuse, domestic violence and sexual exploitation have been reported in

several countries. By impacting schools it often deprived students of the mid-day meals that supported their studies. Many parents have lost their jobs, sometimes leading to mass internal migrations. Education inevitably takes a back seat at such times. Many students trying to learn from home face isolation, lack of peer support and physical inactivity. Those in their terminal school year are anxious and stressed due to the uncertainty about the next phases in their lives.

Crises disrupt the lives of students in various ways, depending on their course of study and the point they have reached in their programme. Those ending one phase of their education and moving on to another (e.g. from school to tertiary, or tertiary to employment) face particular challenges. Education systems and their institutions should make the reassurance of students and parents through targeted communication, a priority. Teachers and counsellors will often have to provide this reassurance without clear answers to the general question of when the disruption will end and to specific queries about arrangements for replacing cancelled examinations or changes to procedures for admission to the next level of study. Teachers and school personnel may be better able than parents to assuage the anxieties of students in deprived situations. Some help lines and resources outside the school system specialise in addressing emotional and psychological challenges and welcome referrals (Daniel, 2020). The National Institute of Open Schooling in India uses a call centre to provide support to the learners.

For students the hardest aspect of sudden school closures, especially when combined with injunctions to stay at home, is being torn away from their social group almost overnight. In crises (e.g. infectious diseases) where physical distancing is necessary, some social contact may be restored through chat groups and meeting rooms on the virtual technologies that are used for teaching. Where physical distancing is not required, normal extra-curricular activities and opportunities for sport can be increased.

Wherever the sudden vacating of schools and colleges may be a possibility there are practical preparations to make. Students should identify the books, equipment, etc. that they will need for study at home. Staff should have protocols in place for continuing arrangements for safeguarding children; for the division of responsibilities between departments; and for remaining in contact collectively for mutual support. Teachers should ensure that regular feedback is provided, and test results and reports are up to date.

Conclusion

Many countries have done a remarkable job in guiding their education systems to face the challenge of COVID-19. Most had to close their schools and colleges and make arrangements, in short order, for continuing to educate pupils and students at home. As these immediate challenges recede into memory, governments should not let their responses to this crisis go to waste. They should assess the effectiveness of their country's preparedness for COVID-19 with the aim of making the education system more resilient to shocks and upheavals of all kinds in the future.

An immediate consequence of such crises is to exacerbate the existing inequalities within countries, especially as manifest in more limited access to education for poorer children, girls

and people with disabilities. Because quality education systems also tend to be equitable systems, governments should pursue both quality and equity as they develop their networks of educational institutions to become resilient. These considerations are especially important in making decisions about expanding ICT infrastructures and distance learning arrangements: essential components that provide flexibility and choices to reach people wherever they are.

Finally, a resilient system must be greater than the sum of its parts. Governments have advisory bodies for different aspects of their education provision. Establishing a group to advise on crisis readiness could help a country's educational institutions react in a coordinated manner to future crises.

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Author bios

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