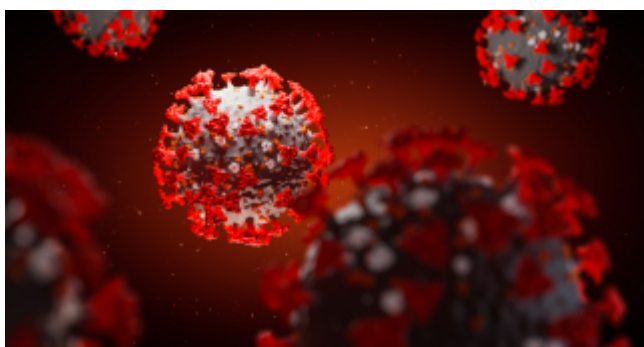


# Small Island Developing States, COVID-19 and Digital Technology



*Posted by David Fellows<sup>[1]</sup> and John Leonardo<sup>[2]</sup>*

## The impact of COVID-19

COVID-19 has changed behaviour throughout the world and social distancing has been the key driver. Workers in factories, shops and offices have been protected by creating greater space between workstations, erecting protective screens and using protective clothing. Distancing requirements have been introduced in bars, cafes, restaurants, hotels, markets and shopping centres. All economies have suffered, especially the hospitality industry, air travel and public transport. Unemployment has soared. Schools and higher education colleges have closed. Many countries are turning to the IMF for support.

The internet has proved a beneficial facilitator of economic

activity, allowing most administrative work and the ordering of goods and services to be undertaken at home. Video conferencing has facilitated meetings with colleagues, business partners and clients, and helped maintain contact with friends. Online learning has featured in reopening plans for higher education and some schools. In this new world digital technology has achieved an elevated significance beyond its already pervasive presence in the pre-COVID era. In some ways it has already established a new normal.

This brief piece focuses on small island developing states (SIDS) but even here the challenges are not identical. Some countries depend heavily on a now-dormant tourist industry and shoulder severe difficulties. These include poverty, remoteness, disbursed communities and the need to combat the threat of natural disasters. The virus demands a minimisation of personal contact for which the absence of good quality, low cost digital communication leaves many states poorly prepared. The [UN E-Government Survey 2020](#) notes that of the SIDS only Singapore and Bahrain have high overall scores; almost half scored less than 50% of Singapore's score for infrastructure.

## **Communication infrastructure**

Good quality digital communication requires fibre-optic broadband cabling to support business use and homeworking with adequate resilience, even including 4G and Wi-Fi. 5G is costly and has [potential shortcomings](#) at present. This option requires specialist advice.

Understanding behaviour is important to government strategy. Contributing factors include levels of public education,

affluence, user tariffs and local cost factors. Lobbying based on knowledge of the operational intentions of the [marine cable-laying industry](#) could be important.

Regional collaboration could provide impetus to network improvement strategies, regulatory frameworks and licensing agreements.

## **Technology applications**

The digital service revolution discussed above and already taking place across the world, accelerated by the onset of COVID-19, is inescapably relevant to SIDS. There are many specific business [applications of relevance to SIDS](#), including: health advice (including C-19) and personal consultations; agricultural monitoring and market information on crops and livestock; and weather monitoring for fishing, agriculture and general safety considerations. Additionally, expatriate monetary transfers are being undertaken increasingly using digital systems. The creation of digital services relevant to developing countries gathers pace [and must be encouraged](#).

Video conferencing, email and document handling systems provide an essential communication layer that is particularly useful to achieve social distancing.

Apart from their use of major business applications governments can make use of social media for public messaging, for instance, demonstrating transparency and engaging citizens the struggle against corruption when resources are so scarce.

## **Technology skills**

Digital communication infrastructure must be complemented by a capacity for: upgrading, expansion and rerouting of infrastructure; installing application software; implementing major software packages; and even the development of service applications. This requires learning at various levels gained from school, college, in-service courses and practical experience.

An understanding of the technology is also required to educate potential adopters about the possibilities that digital communication offers them. This includes the general public, small businesses, the public sector and larger private sector organisations.

Digital technology [skill development is essential to help SIDS](#) adjust to the current situation.

## **Towards cost-effective solutions**

COVID-19 is forcing change to the way people live throughout the world and economies are in crisis. Digital communication offers the capacity for helping maintain business continuity. Most SIDS would benefit from a higher standard of affordable digital communication supporting improved digital service delivery.

Digital technology must be designed to the needs and circumstances of individual states. Nevertheless, there could be much to gain from cost-effective collaboration between SIDS

for the purposes of sharing and developing:

(i) an understanding of the economic and social impact of COVID-19 and ways of mitigating these effects through digital communications;

(ii) market-shaping policies and practices for increasing the availability of digital communication at an affordable price;

(iii) strategies and programs to support the provision of expertise in digital technology and its use by business, public services and the general public; and

(iv) knowledge of relevant progress made on these issues throughout the world.

Such an initiative, whether on a global or regional basis, could include SIDS, development agencies, the digital service industry, other private sector partners and potentially the Commonwealth Small States Centre of Excellence. Is this a step too far?

This blog was published by the International Monetary Fund's Public Financial Management Blog on 18 August 2020 at <https://blog-pfm.imf.org/pfmblog/2020/08/-small-island-developing-states-covid-19-and-digital-technology-.html>.

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# Virtual Schooling in the United Kingdom

by David Fellows (1)



The closure of schools to combat Covid-19 is a dramatic response to the virus that presents significant challenges concerning the continuity of education and the pupil/teacher relationship. This article offers some thoughts on the application of digital technology to support school-aged education at home whether made available by their normal school or stand-in facilities that come to market. Reference is made to virtual schools already in existence, home schooling networks and relevant BBC materials that are already available.

## **The Virtual School**

Schools in the UK are at different stages in their use of digital communication. The Covid-19 virus lockdown involving school closures is both a challenge to the continuity of education and an opportunity for schools to extend the range

and sophistication of teaching aids, methods of communication with pupils and parents and collaboration within the teaching community.

The technology requirements necessarily follow the interactions between the teacher and the student: programmes of learning; lesson plans and notes; conversations between teachers and pupils (both on a personal basis and open dialogue for class participation); the provision of source material; the setting of course work questions, the submission of responses and the return of work with marks and comments; examinations set and taken; student records maintained and reports issued. All these interactions can be provided in formats devised by the teacher or supplied by developers.

Online document stores(e.g. Dropbox, Google Drive) can be used for distributing: programmes of work; lesson plans; teacher's introducing the year, term, week or learning programme via video recording; video recordings of lessons (the presenter need not necessarily be the teacher); lesson notes and with references to supplementary material that can be found in text books or on the web; work sheets for online completion; or headers for projects and essays. All this may need adult support for younger pupils.

Document handling systems can be used for: questions of clarification and answers from teacher (transparent to whole class); lodging responses to assignments (allowing teachers to see at a glance who has returned an assignment and who has not); tick-box answer sheets; and class performance records held confidentially by teachers.

Video conferencing (e.g. WebEx, Skype, Zoom) is an excellent



medium for: small groups working on difficult assignments and personal interactions between pupil and teacher.

Email is a good all-purpose facility. It can be used for: general document handling; the return of marked assignments; following up outstanding work; and dialogue between teachers and parents (e.g. parents advising of pupil's illness). It can fill virtually any gap in systems under development.

Social media can facilitate: short affirmative comments from teachers on class progress; general feedback from pupils/students on topics, levels of difficulty, pace of learning; and general feedback from parents on demands placed on them but the tenor of these exchanges should be upbeat if they are to be sustained and this should be made clear at the outset.

Communities of practice can be developed between teachers using these facilities. For teachers the medium lends itself to sharing materials with colleagues.

This approach can be adapted to virtually every level of primary and secondary learning. Primary needs to bind in parents to a much greater degree in earlier years and the technology may present challenges when applied to entry level although small group teaching by video conferencing with adult support at home could prove practicable with a preparatory session for adult helpers prior to a group of lessons on a particular topic. It has to be accepted that equipment must be available either from home, school, library or community centres (it has to be acknowledge that communal facilities may not be available).

## **Acquiring Proficiency**

The starting point for the development of virtual schooling will depend on current use of the technology by individual schools. With encouragement by head teachers and centres of expertise within the teaching body and through external support arrangements rapid progress is perfectly feasible. Costs can be quite limited at the outset and as the proficiency of teachers and students develops through experience decisions can be taken about increased sophistication of design concept and technology.

The processes and formats will develop naturally through familiarity and experimentation. Pupils and parents can be expected to offer useful contributions. At each stage of development some institutional choices will need to be made concerning objectives, facilities, management and technology to avoid the aggregation of a multitude of systems, licenses, technology support arrangements and the dissipation of expertise. Nevertheless, scope for personal choice by groups of users is likely to facilitate adoption and improvement.

## **Learning from Others**

There are a variety of universities in the UK and around the world that offer online courses and together with the UK's Open University (operating largely as a virtual college) they offer a great deal of readily accessible experience.

Specifically focusing on the UK's primary and secondary school sector there are a number of institutions offering material and advice:

- The BBC offers an extensive package of content for both primary and secondary pupils in its Bitesize series. GCE level material is tailored to the various examination bodies. Details can be found at: [www.bbc.org.uk/bitesize](http://www.bbc.org.uk/bitesize). This material could be used as the basis of school-directed home working. The BBC has announced its intention to expand this service following the Covid-19 school closure announcement.
- There are also several groups that use the internet to support those families that have opted for home education as a long-term preference, including: The Home Education Network and Home Education UK.

Australia has several institutions that have developed into virtual schools and these could be used as models by UK schools that wish to continue to direct the work of pupils registered with them during the closure period:

- Western Australia's School of Isolated & Distance Education (SIDE) supports students in remote areas, students living with their families abroad and those whose lives (say in the artistic field) are difficult to reconcile with conventional school attendance. Digital technology is used for: online learning management (Moodle System); conferencing (WebEx); and a learning materials library. Email is used as a general communication medium. There is also a site that provides parents with insights on student progress, assignment deadlines and school events.

A brief overview of the School can be found on Western Australia's Department for Education site at:

[www.det.wa.edu.au](http://www.det.wa.edu.au). The School has an extensive site at:  
[www.side.wa.edu.au](http://www.side.wa.edu.au).

- The School of the Air was formed out of the Flying Doctor Service and is based in South Australia. Its ethos is one of immediacy of communication with its students. It uses WebEx for conferencing and Google Drive for materials. Its 25<sup>th</sup> Anniversary Report describes the origins and development of the School up to the present day. It can be found at:  
[www.openaccess.edu.au](http://www.openaccess.edu.au).

## Conclusions

The use of document storage and handling systems for educational purposes is not complex but they can benefit from development and refinement following experience. The technology lends itself to the refinement of processes, editing of instructions and repurposing of teaching materials. The preparation of video-based presentations is feasible on various platforms as is video conferencing which can range from an inexpensive and simple format to more expensive offerings with a variety of sophisticated features.

The key issues for users to resolve include the rules of engagement, the choices of technology and the degree of uniformity in approach to be adopted within an institution. There is clearly scope for some initial commonality followed by experimentation and realignment in an iterative process.

Online communities of practice for teachers (and even for

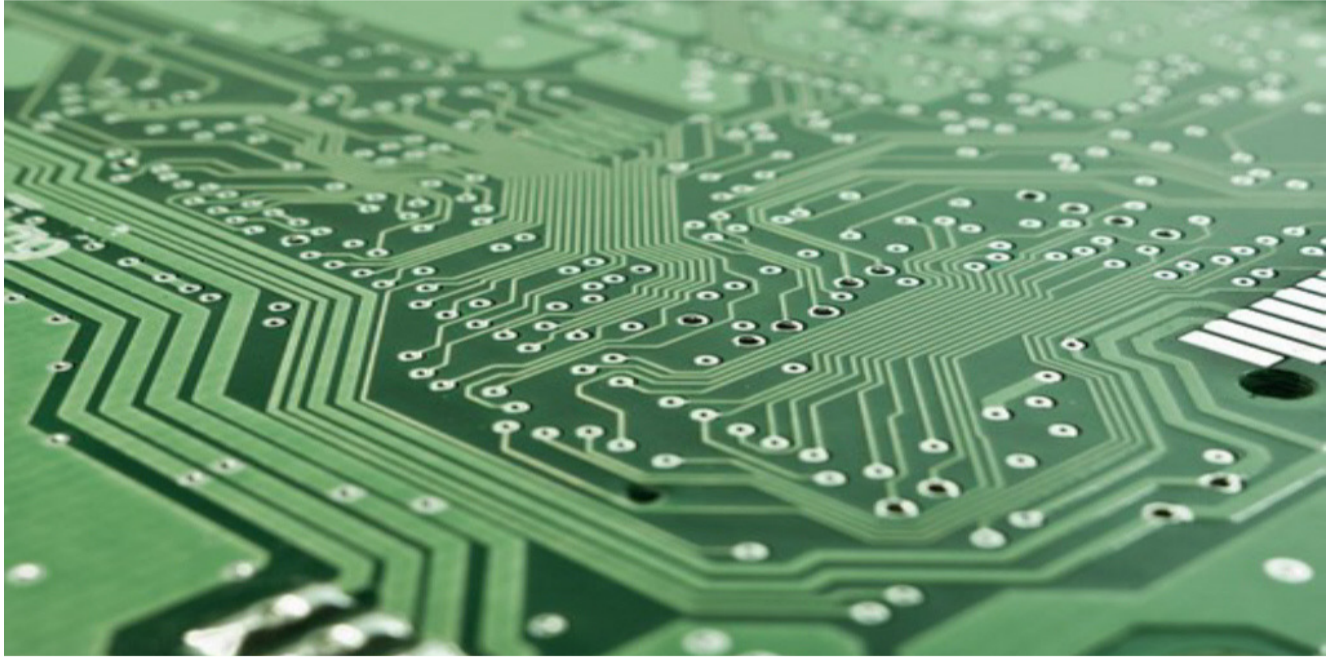
parents) may well be helpful to support continued development and problem-solving. School closures in Europe and now in the UK make this a regrettable but necessary moment that requires rapid progress in this field. The key challenge is getting the development process right: loose enough to draw the virtual communities of a school together giving them the opportunity to offer their contributions to the development of the initiative but tight enough to provide a thread of coherence and communal learning at school level. Importantly, where a virtual school is created out of an established day school under temporarily closure then it must find ways of retaining its ethos and identity. This represents an exciting and potentially rewarding challenge borne out of a grave situation.

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# **Using Digital Technology to Improve Sustainable**

# Development Goal (SDG) Delivery



by David Fellows and Glyn Evans [\[1\]](#)

# The SDGs

The United Nation's [SDGs](#) present an array of complex social, engineering, medical, scientific and managerial challenges for member states set in different contexts and mostly requiring very significant investment, organisational capacity and community involvement. Nations have made commitments to this agenda and it is accepted as guiding the key purposes of international development work worldwide. It is a hugely ambitious enterprise yet we suggest that current development work could be more successful.

## The need for a powerful learning system

At a general level perhaps the greatest challenge is the creation of a learning system that is powerful enough to develop and distribute relevant knowledge and an understanding of how that knowledge can be best applied in the very different circumstances that exist across the world. As SDG performance criteria are finalised and adopted a [report by ESCAP](#) makes it clear just how difficult it is going to be to make a real difference.

We are not suggesting a great deal of organisation to create this necessary learning system. We propose a loose system of networking between experts based on digital communication. This would enable advice to be made available to community-based projects with greater levels of expertise being made available to the development of major programmes and projects. It would also facilitate feedback on project progress and performance. The use of digital technology would also improve the public information base and support public engagement.

## Learning system features

The basis of this networking would be a digital communication system that would be largely self-driven by those in the field and a support network that will evolve around them. Key aspects of this digital communication system are illustrated below.

*At national and local level:*

- *Provide feedback on progress made at local level within the country*
- *Request the public to identify key factors to be taken into account when designing SDG initiatives*
- *Seek feedback on the regulations required to support SDG initiatives*
- *Engage in shared learning (perhaps amongst scattered populations) between ordinary people who are trying to cope with SDG challenges on limited resources*

*At regional level:*

- *Undertake shared research programmes*
- *Share experiences of adapting recognised approaches to particular circumstances*
- *Improve monitoring techniques*
- *Share monitoring and advisory services*
- *Encourage the development of problem-solving support networks*
- *Undertake peer reviews of projects and governance*



*arrangements*

*At international level:*

- *Build worldwide expertise to address fundamental scientific, engineering, economic, social and implementation challenges*
- *Identify and promote successful strategies and initiatives*
- *Recognise issues for which effective solutions remain elusive*
- *Create networks capable of addressing significant and urgent challenges*
- *Develop modeling tools to help design solutions*

*Supporting technology would include:*

- *Websites including chat rooms, website messaging, on-line data monitoring and online questionnaires*
- *Video-conferencing for expert dialogue and advisory sessions*
- *Cloud-stored databases and shared document development*
- *Email for public interactions( newsletters), dispatch of documents, technical & administrative correspondence and technical update circulars*
- *Learning management systems to support training programmes that develop skills and expertise*
- *Application software to assist the gathering of performance data including the collection of data from administrative*

*sources (ESCAP Report [ibid](#):  
page x)*

- *Text messaging and social media for public dialogue*
- *Massive open online courses to raise general awareness*

In general such a system would require relatively unsophisticated technology dependent only on fairly low level digital communication. Expert dialogue would tend to benefit from good connectivity at reasonable bandwidth to support video conferencing although this is not absolutely essential. Proprietary software is readily available for most of these applications although bespoke monitoring, modelling and assessment tools could be created as the approach gained traction.

## **Examples from around the world**

Our blog '[An International eCollaboration Route to Public Service Reform](#)'

(also published by the Australian National University's [DEVPOLICYBLOG](#) in July 2017) considers the diverse power of digital communication technologies. Examples of this technology used in ways relevant to this proposition are, as follows:

1. An example of 'Shared Learning' is set out in the UNESCO publication [Digital Services for Education in Africa](#). UNICEF has reported that in Vietnam 40% of children in rural areas used the internet for educational purposes, rising to 62% in urban areas.

2. Communities of practice have already been established in

[Canada](#) for green climate purposes

3. Social media has been used by PFMConnect for the past three years to raise public awareness on public financial management and governance topics reaching significant numbers of people in more than 50 countries.

## Conclusion

This is not a system requiring heavy oversight and regulation. We seek cultural change to the way programmes and projects are developed. A more inclusive approach at expert and community level could be usefully supported by major development agencies and could become a requirement on contractors. For instance, these proposals could help the Green Climate Fund which appears to be heavily engaged in process issues at the expense of shared innovation.

Is it time to experiment with change?

## End note

We should be pleased to discuss the ideas in this piece with those who believe that they may have relevance to their situation.

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