Summary

Overview of emerging country-level response to providing educational continuity under COVID-19
Best practice in pedagogy for remote teaching

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Executive summary

Scope of study

This report provides a rapid evidence summary of what is known about best practice in teaching when school students are educated by distance learning.

It considers both theoretical concepts and empirical evidence relating to the effectiveness of teaching methods used in a distance learning context.

The report includes a consideration of the grey literature about pedagogy produced in response to the current period of global school closures.

There are limitations in the nature of the evidence base. Much of the research into remote pedagogy comes from a higher education context. Little attention has been devoted to remote pedagogy at primary school level. Research evidence from low-income and middle-income countries is limited.

Key themes

The general principles of effective pedagogy remain valid in the context of remote learning, but there are additional challenges facing the remote teacher.

The highly effective remote teacher must be proficient in the same domains as the face-to-face teacher: planning and teaching well-structured lessons (*structure*), adapting teaching when appropriate to meet individual needs (*adaptation*), and making accurate and productive use of assessment (*assessment*). However, physical distance between the teacher and learner brings considerable challenges and requires changes to planning, teaching and assessment practices. Online teaching should not try to mimic the entirely synchronous teacher-student engagement of the conventional school. Ensuring equitable outcomes for disadvantaged students is more difficult for remote teachers and requires greater intentional effort. Pedagogical performance is circumscribed by the digital capacity of the teacher. The digital capacity of teachers in some high-income countries is poor and is poorer still in most low-income countries. Many teachers need professional development support in the use of technologically enhanced pedagogy.

Research highlights the importance of developing and maintaining 'teaching presence', in order to ensure that learners thrive when studying remotely.

The failure of many MOOCS demonstrates the importance of student persistence and motivation and this, in turn, depends upon substantial teacher-student engagement. There is a well-established theoretical framework for considering the work of teachers in a distance learning context which emphasises the need for proactive planning to ensure 'teaching presence'. This was developed by the Canadian researchers, Anderson and Garrison. The remote teacher starts at a disadvantage in terms of social interaction and must therefore deliberately strive to remedy this, making students aware of their teaching presence through many different forms of dialogue with remote students: instructing, guiding, questioning,

listening, assessing, advising, admonishing and reassuring as appropriate. Student success depends upon having a strong sense of the teacher's virtual presence. A well-designed sequence of remote learning will involve frequent, diverse opportunities for the teacher to demonstrate 'presence' to students, including assessment activities. Teaching presence can be promoted regardless of whether the main form of remote instruction is via centralised radio/TV broadcasting or whether students are engaged in online learning with a local school.

It is a false dichotomy to propose that undesirable 'teacher-centred' rote learning or desirable 'student-directed' enquiry constitute the two main forms of remote pedagogy.

The model proposed by Anderson and Garrison is neither 'teacher-centred' nor 'student-directed'. For them, the effective remote teacher is a subject matter expert skilled in different aspects of 'direct instruction', including exposition and explanation. At the same time, students are highly engaged in their own learning. Students are encouraged to take responsibility for their work and to develop metacognitive strategies. Effective teaching presence involves the provision of a well-structured sequence of intellectually engaging learning activities and frequent diagnostic feedback.

The USA has substantial experience in educating school students via distance learning, but virtual charter schools achieve poor academic outcomes.

There are currently about 300,000 students enrolled in the virtual K-12 school sector in the USA. Pedagogical quality expectations are set out in national standards, which were revised in 2019. There has been substantial research into the sector, particularly into learning outcomes and provision in virtual charter schools. Some major studies have been negative about the outcomes and provision offered by these schools. One important study highlights the excessive 'personalisation' of provision and the emphasis on 'self-paced study' as a factor contributing to student underachievement.

The Chinese government approach to pedagogy during the current school closures provides an interesting case study.

The Chinese authorities reviewed the literature and identified key pedagogical risks in moving to remote learning: teachers can be overwhelmed by the curation challenge of organising online resources; teachers need training or support when moving to remote pedagogy; some learners lack mature skills in self-regulation and independent study. The Chinese authorities sought to mitigate these risks and advocated a blend of asynchronous and synchronous teaching and technologically enabled assessment practice.

Governments can assist in the curation of learning resources.

Creating entirely new learning resources can take up a disproportionate amount of a remote teacher's time, thereby reducing available time for interaction with students. Governments can help by providing centralised guidance on suitable learning resources. Open Education Resources (OER) are particularly useful because they allow teachers to modify materials to suit the particular needs of their students.

Remote teaching brings challenges, but technology can be used to enhance the impact of distance learning.

Whether the medium is radio or TV broadcasting or online learning, remote teaching activities can be designed in ways that maximise cognitive engagement and minimise the risk of passivity on the part of the learner. Students should be frequently encouraged to evaluate their own work and to understand 'what good looks like' and how they can take responsibility for improvement.

Recommendations for policymakers

1. Promote safeguarding

Remote learning creates new health and safety risks for children. Online engagement by minors can lead to different forms of abuse. Some children and young people unable to attend school will be at a greater risk of harm at home. Governments have a fundamental responsibility to mitigate these risks and promote the importance of different forms of safeguarding.

2. Make teaching engagement with vulnerable and disadvantaged students the top priority

The evidence relating to distance learning identifies student motivation, engagement and self-regulation as the single biggest challenge facing the remote teacher. This challenge is exacerbated in several ways by disadvantage. Insights from this Evidence Review are consistent with the global consensus that policymakers must make learning continuity with disadvantaged and vulnerable students the top priority during the period of school closure. At a local level, teachers should use all available means to keep in touch with high-risk students and their families, providing pastoral support and guidance for learning.

3. Look for all available opportunities to promote 'teaching presence'

Students will benefit from the highest possible level of interaction with teachers. Achieving teacher visibility will be particularly challenging in those countries where the primary means of remote instruction is through a centralised radio or TV channel. Those responsible for the design of the programmes should ensure that there is continuity in the face or voice of the central teacher. The broadcast teacher should demonstrate a caring persona, demonstrating warmth and an interest in student welfare and academic progress. Opportunities should be identified to create a sense of community. Conventional radio routinely promotes the idea of 'the community of listeners' by inviting individuals within the audience to submit questions via SMS. This humanises mass media broadcasting.

In the context of centralised remote teaching through radio or TV, there may be scope for supplementary engagement by local teachers using SMS messaging or social media to establish 'presence' with students. If possible, teachers should contact their own students,

checking that they are engaged with the broadcast resources. In the context of very large classes and high student-teacher ratios, teachers should always give priority to contacting the most vulnerable learners. Local teachers should also attempt to establish SMS or social media contact with parents, encouraging them to ensure that children engage with the broadcast material and providing regular tips on the focus of the children's learning.

Policymakers should manage centralised broadcasting adaptively, gathering data from localities about levels of use and engagement, and looking for practical ways to modify provision in order to increase engagement.

Where online learning is possible at school level, teachers should promote 'presence' through the design of both synchronous and asynchronous activities. Teachers should look for every possible opportunity to humanise and personalise pedagogical messaging. Synchronous teaching may be technically difficult but provides a potentially important context for teacher-student engagement. Formative assessment dialogue is both essential for learning and a way of transmitting the message that the teacher cares about the wellbeing and progress of the individual student. Video, used either synchronously or asynchronously, gives the teacher a powerful means of promoting their presence. A 'virtual office hours' approach should ideally be used so that individual students can proactively ask for guidance and feel that their personal academic or pastoral problems matter to the remote teacher.

4. Design broadcast and online teaching activities that encourage cognitive engagement and learning

Whether the medium is radio or TV broadcasting or online learning, teaching activities should be intended to maximise cognitive engagement and minimise the risk of passivity on the part of the learner. The remote teacher should provide frequent examples of 'modelling', personally demonstrating the skill that is being taught and inviting the student to understand the components of good work. The teacher should make visible to the students the thought processes and decisions made when producing the modelled work. There should be frequent low-stakes assessment activities which encourage students to retrieve and apply their knowledge related to the topic. The remote teacher should promote metacognitive strategies. Students should be frequently encouraged to evaluate their own work and to understand 'what good looks like' and how they can take responsibility for improving their own work.

5. Understand the challenges and limitations of self-paced and student-directed learning

It is, of course, important that students develop the ability to work independently. However, too much emphasis on self-paced learning can lead to disengagement. In a distance learning context, great care is needed in considering the required levels of self-regulation.   The lesson from the world of MOOCS is that even adults find self-paced learning, with limited teacher interaction, problematic. Student project work requires particularly careful design. Students need opportunities to research and answer enquiry questions, but they also benefit from careful structure and regular access to inputs and guidance from an expert teacher.

6. Support teachers through the curation of learning resources

Remote teachers should be given as much help as possible in accessing existing, quality-assured curriculum materials. Teachers are likely to find OER particularly helpful because they have the potential to provide both high-quality resources and scope for modification to meet specific local circumstances.

7. Plan for school re-opening and beyond

Despite all best efforts, it is inevitable that some students' learning will be harmed by the current phase of school closure. Policymakers should be planning now for 'catch-up' programmes when schools re-open. While the world awaits a vaccine for Covid-19, there remains the possibility that schools will be forced to close repeatedly and there is a need to plan for a more resilient remote teaching infrastructure that enables better maintained learning continuity during any future school closures. The current crisis also provides an opportunity for learning about the strengths and weaknesses of technology which can be used beyond the period of Covid-19 crisis.

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