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How should we help the Covid19 cohorts make up the learning loss from lockdown?

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Thanks for very helpful comments to Anna Vignoles, Hans Sievertsen, and Jack Worth.

Around Europe, it seems that the immediate public health crisis is beginning to fade, although all are braced for a potential second wave of infection. The most intense policy attention will now surely focus on the economic crisis already underway, and on the longer run impacts of the pandemic. It should be a central concern to prevent this one-off event from permanently blighting the life chances of the millions of children who missed weeks of school due to the lockdown. This is a real possibility: missed school means lost skills and reduced earnings potential. The cumulating nature of skill formation (and skill loss) means that we need to tackle this now.

1. What happens if we do nothing?

The starting point is that skills will be lower with so many missed weeks of schooling. And while for some families this has been offset by learning at home, the evidence suggests that this has only been partially and intermittently successful[1]. Furthermore, the degree to which home learning has compensated for school closures seems to be very socially graded, with children from the poorest families losing the most. Lower skill levels and increased skill inequality have implications for individuals and for the country.

a) Personal level

The most important implication for an individual is lower earning potential. Higher skills command higher earnings. As Portes (2020) succinctly puts it, if a student misses a quarter of a school year, and each school year brings roughly a 10% return, earnings potential is likely to be permanently lower by around 2-2.5%. That loss is likely to be higher if the disruption happens early in an educational career (see also Jaume and Willén, 2019) . Of course, education matters causally for other things too, and these are likely to be compromised by the lost skills: health and longevity, unemployment, and wellbeing among many.

b) National level

Skill loss matters for growth and prosperity. Different estimates have been made of the skills loss from missing a term of school. Burgess and Sievertsen (2020) estimate a loss of around 6%SD for adolescents and suggest that the overall loss might be considerably higher for younger cohorts. Of course, this is an average, some would recover the loss without outside intervention, others would

[1] Not for want of trying, but partly due to lack of time, skills and resources, and partly simply because teaching is hard. Recent evidence includes EEF (2020), Montacute (2020), Andrew et al (2020) and Bol (2020).

see their skills fall further and further behind. We can see what a working assumption of an overall 10%SD loss would imply[2].

The affected cohorts are the 2019/20 Reception year, born in 2015/6, through year 12, born 2003/4. Looking forwards, from the mid-2030s, all workers in their 20s will have 10%SD lower skills than they would otherwise have. And for the 50 years following that, around a quarter of the entire workforce[3] will have lower skills. For that 50-year period, national skills will be lower by around 2.5%SD. This implies that the national growth rate will be lower by 0.04 percentage points[4]. The present value of such a fall in the growth rate is measured in billions not millions; even an expensive remedial scheme would be well worth it. Of course, all such estimates are very rough, but they are the best estimates we have.

As well as a fall in income, all the evidence to date points to a widening of inequality. One among a number of very recent analyses, the EEF (2020) for example suggest that the attainment gap between poor and non-poor students might widen by 36%. This will have further stark consequences for individual livelihoods and for social cohesion.

2. Criteria for choosing a policy

1. The policy intervention must come soon. We cannot wait and do this slowly over the next few years. Still less can we wait and "sort it out at GCSE". The process through which skills are formed is dynamic – knowledge builds on knowledge, or as Heckman and colleagues put it "skills beget skills"[5]. If we do not attempt to catch-up the lost learning quickly, that loss will compound and essentially become untreatable. Another way of putting it is that the skill complementarity over time means that if we invest in a 10 year-old today, it will cost less than if we invest when that child is 15 years old to get to the same outcome at age 16.
2. Over the period of lost schooling, from the end of March through until the end of term in July for most students, a fantastic effort has been made by schools and teachers to get online resources to children to continue learning at home. This has put parents into the role of teachers, whilst many of them are also continuing as workers (and parents). There is already a good deal of evidence[6] that this has not been very successful, with many families reporting little learning has taken place. So, despite the cost temptation to try to simply catch-up lost skills at home, this will not do[7]. If that had worked well for everyone, we would not be facing such a loss of skills. Indeed, providing more resources for use at home may in fact increase inequality if they can only be used effectively by some. The policy intervention must be school-based not home-based. Needless to say though, it will benefit from involving families, but it must not rely on that parental input.

[2] This translates to around 2 months loss of learning.
[3] Assuming people are in the labour force in their 20s through their 60s.
[4] See Hanushek and Woessman (2012)
[5] See for example, https://heckmanequation.org/resource/skills-beget-skills/ plus a lifetime of very influential scientific papers, for example: Cunha and Heckman (2007)
[6] See Andrew et al (2020) or Bol (2020).
[7] This suggests that the EEF/Sutton Trust pilot of online tutoring may not be as effective as hoped: https://educationendowmentfoundation.org.uk/news/online-tuition-pilot-launched-school-closures-could-undo-progress/

3. The policy intervention also has to be something new, something extra, and something temporary. This is different from the usual policy question of simply "making schools better". The quest for those policies should go on, but the current situation requires something much more immediate, and immediately effective.
4. While of course it is not true to say that the cost does not matter, we must anticipate that a policy intervention at such scale will not be cheap. Skills have been lost that were to be taught over a 12-week period. Replacing that necessarily takes time, and resource. However, it is clear that the cost to individuals affected and to the country of doing nothing is dramatically higher.
5. Finally, we must use an intervention that already has substantial causal evidence supporting its effectiveness. This is by no means a trivial requirement. The brilliant work by the Education Endowment Foundation in the UK and similar bodies elsewhere shows that in fact many much-hyped education policies have no effect. Finding broad robust empirical support for an intervention is rare, but is something we should insist on, both to improve the futures of the affected cohorts, and to justify the cost of the intervention.

The policy that best fits these criteria is small group tutoring, based in schools.

3. Proposal

The proposal is an extensive but time-limited use of small group tutoring in as many of the school years as possible, to remediate the learning loss suffered by the missed months of schooling.
I proposed the use of small group tutoring earlier in this crisis[8], and this document aims to fill out the details and estimate the cost.

Support for a very similar idea is also building in the US, following an earlier proposal[9] from Robert Slavin, Director of the Center for Research and Reform in Education at Johns Hopkins University, and support from leading education economist Susan Dynarski[10].

a) Description

Small group tutoring is a flexible approach, with several parameters varying the 'dose': the number of pupils per group, the amount of time per session, and the number of sessions. It is fair to say that not all of these dimensions have been fully explored by suitably well-designed experiments. There is robust evidence showing that one-to-one tutoring works[11], and we can build from there. While effectiveness declines the bigger the group, it seems there are only marginal falls in impact from two in the group to six in the group, and steeper falls thereafter[12].

[8] In a BBC R4 interview (9/4/2020, https://www.bbc.co.uk/programmes/m000h0w0), and in a Royal Economic Society Webinar on 7/5/2020 (http://bit.ly/3fx4BG1 , https://t.co/ZbXt64nwxY?amp=1) and for the Campaign for Social Science 20/5/20 (https://campaignforsocialscience.org.uk/news/the-covid-19-crisis-and-educational-inequality/).
[9] https://robertslavinsblog.wordpress.com/category/covid/
[10] https://www.nytimes.com/2020/05/07/business/school-education-online-money.html
[11] See for a good summary https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/one-to-one-tuition/
[12] See the EEF summary here: https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/small-group-tuition/

Taking a 'dose' of the intervention to be half an hour a day, for each week-day, for 12 weeks[13], there is good evidence that this has an impressive effect on learning. The EEF evidence toolkit estimates that such a 'dose' of Small Group Tutoring typically yields an extra four months' progress in school. Of course, these are all averages, but the rough equivalence between a gain of an extra four months' progress from the intervention and a loss of three months' schooling from the lockdown seems appropriate. A thorough and wide-ranging meta-analysis of effective educational interventions with robust evidence in the US (Fryer, 2016) also concludes that interventions that "implement "high-dosage" tutoring tend to demonstrate large effects" (p. 6), reporting very high pooled impacts from 0.78 to 1.58 SD.

b) Cost

Most of the cost of this scheme is the time of the tutor. The extra tuition would take place in the pupil's usual school, after school, and while this would likely generate additional costs, these would be relatively minor. The EEF[14] have estimated a cost for small group tutoring: for the dose noted above, they estimate a cost of £700 by adding up the time and taking it relative to the annual workload of a regular teacher. This is clearly subject to a number of uncertainties, not least how the different groups are bundled up into jobs, and the level of training of the tutor (discussed below).

Table 1 presents some rough estimates of what the overall cost might be. They key parameters to be chosen are: first, what fraction of a cohort would be involved? I have chosen here 40% since we know from the accumulating evidence that not many families and pupils made a success of home learning. Second, group size obviously has a clear and straightforward impact on costs and a much vaguer effect on learning; I have chosen 5 in the example. Third, we need to decide which cohorts to include, within schooling up to year 11[15]. Ideally, all cohorts would be helped, but for this example I have chosen 6: years 1, 2 and 3 in primary schools and years 7, 10 and 11 in secondary schools. For the cost per group, I have taken the EEF figure of £700 per group per 'dose'.

The total is £222m. This figure is very modest, less than 1% of the overall schools' budget. It suggests that the possibility of involving all the cohorts should be considered, raising the cost to around £410m.

The average number of groups per school is manageable. The estimates imply for a typical primary school, around 2-3 groups per treated cohort, or 7-8 groups in total. For a typical secondary school, the numbers are proportionately bigger, simply because secondary schools are much bigger (and will clearly have enough space). These numbers are averages and some schools would have more and some less.

c) Operations

Clearly, it is not possible here to set out here how it would all work. But some ideas follow on what some of the main features might look like.

Who should take on the role of tutors? First, not the schools' own regular teachers: although working with someone the students know has benefits, they will have enough to do and the

[13] https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/small-group-tuition/

[14] https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/small-group-tuition/

[15] Things are more complex after that as not all pupils are in schools as opposed to FE Colleges.

direction of policy is to reduce teacher workload. There are a number of other possibilities. There are over 250,000 people trained and experienced as teachers not currently working as teachers[16]. Such people might be tempted back to work as small-group tutors for a fixed period of time, though previous attempts to do so have been only partially successful[17]. Looking more broadly, there will be many recent graduates without the jobs they were expecting. While it remains controversial for some, it is now widely accepted that there are successful routes into teaching that do not require many months of training. It is perfectly plausible that large numbers of recent graduates could become very effective tutors with short spells of intensive training in the style of Teach First training.

What might the timeline be? While an ideal start would be September, this seems infeasible. Not least because a September start date for normal schooling is currently not certain. A period of a few weeks after that would allow time for pupils to be selected onto the scheme, for selecting and training tutors and for making all the arrangements in each school. A rapid but more feasible start would be after the October half-term, breaking over the Christmas holiday and finishing by the Spring half-term in February, or Easter at the latest. It is essential that this happens soon – postponing for another year makes the problem bigger.

Where would it happen? In the students' own school, in regular classrooms after school.

Which students would take part? The decision should clearly be based on a learning outcome, not on perceived disadvantage or some other characteristic. Making the small-group tutoring available simply to disadvantaged pupils for example would likely bring stigma risking low attendance, and would be patronising and wasteful: not all disadvantaged pupils do badly at school and not all disadvantaged families were unsuccessful at home learning. Ideally there would be a simple diagnostic tool – a test for all students to gauge where they are relative to where they should be, done online with instant marking, and age-appropriate. But that may not be available (and may not be cheap). Many schools routinely run such tests for their own pupils, so it may be feasible. Absent that, it will have to be the teachers who interact with their pupils from the start of term and judge their level, based on a set of criteria. This kind of subjective view has its drawbacks, but is quick and should be holistic, and it needs to stand firm against parental pressure to include (or exclude) their child from the process. One significant simplification meaning no cross-school normalisation is needed, though with clear drawbacks, is that each school selects the same percentage of pupils for the programme, their lowest achieving x% of pupils in each relevant school year.

How would it be funded? This clearly needs wholly additional funding. The current Pupil Premium funding is already being used in other ways and is simply not enough. While ear-marked pots of money for specific functions are not generally popular, that might have to be how this goes, financed as a national scheme with funding devolved to each school to pay for the tutors.

What would secondary students cover in their catch-up tutorials? Secondary school students cover a range of subjects, and it is simply infeasible to cover them all. A focus on maths and English is much simpler, and typically spills over into supporting other subjects also. In terms of qualifications, these two are the most important subjects.

d) Related Ideas

16 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/830283/SWFC_Tables_2018v2.xlsx

17 https://www.nfer.ac.uk/evaluation-of-the-return-to-teaching-pilot-programme/

There are other ways of approaching this, also with merit, but I believe that this proposal has the greatest likelihood of success. A proposal for classes over the summer holidays has been made by the Children's Commissioner to the House of Commons Education Select Committee[18]. The advantage of this is that it starts straightaway, but it seems unlikely that even starting tomorrow, the plans could be put in place to make it a properly productive time. Also, many teachers have been working very hard and will no doubt need a holiday. Second, other tutor-based ideas are for online tutoring, to be trialled by the Education Endowment Foundation, the Sutton Trust and others[19]. The trial results will be awaited with great interest, but the history of online education does not bode well. And given the widely reported lack of general success of home learning over the last term, it seems we should not be too hopeful. Third, a volunteer-based tutoring service has been proposed, building on some suggestions from Major and colleagues[20]. This also would no doubt do some good, but an influential evidence review suggests volunteers would be less effective than trained professionals and not that much cheaper[21].

4. Finally

As Anna Vignoles and I said[22] of the current crisis: "Younger generations will pay a heavy price for our response to this virus." Their learning opportunities have been reduced, their assessments changed and many will graduate into a recession.

This note suggests a way to repair some of the educational damage using small group tutoring, a method with widely proven effectiveness (4 months extra learning), at a modest cost (less than 1% of the schools budget), and on a rapid but feasible timescale (start in October, finish by Easter). Many details would need to be decided, but the bones are here to make a start.

[18] https://www.theguardian.com/education/2020/jun/03/organise-catch-up-summer-schools-to-help-disadvantaged-pupils-uk-told

[19] https://educationendowmentfoundation.org.uk/news/online-tuition-pilot-launched-school-closures-could-undo-progress/

[20] See https://www.exeter.ac.uk/media/universityofexeter/collegeofsocialsciencesandinternationalstudies/education/documentsfordownload/National_Tutoring_Service_April_2020.pdf and http://cep.lse.ac.uk/pubs/download/cepcovid-19-004.pdf

[21] https://robertslavinsblog.wordpress.com/2018/04/05/new-findings-on-tutoring-four-shockers/

[22] https://campaignforsocialscience.org.uk/news/the-covid-19-crisis-and-educational-inequality/

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Table 1: Indicative Numbers and Costs

Year group	Age	Number of pupils	Fraction in the scheme	Number of pupils involved	Group size (1/N)	Number of groups per cohort	Average Number of groups per cohort per school	Cost per group (£)	Cost per cohort (£m)
1	5	677,416	0.4	270966	5	54193.3	2.6	700	37.9
2	6	698,193	0.4	279277	5	55855.4	2.7	700	39.1
3	7	700,134	0.4	280054	5	56010.7	2.7	700	39.2
4	8	690,025	0.4		5			700	
5	9	681,192	0.4		5			700	
6	10	687,305	0.4		5			700	
Total Primary		4,134,266				166059.4	7.9		
7	11	663,612	0.4	265445	5	53089.0	17.6	700	37.2
8	12	643,852	0.4		5			700	
9	13	633,241	0.4		5			700	
10	14	623,040	0.4	249216	5	49843.2	16.6	700	34.9
11	15	605,111	0.4	242044	5	48408.9	16.1	700	33.9
Total Secondary		3,168,857				151341	50.4		
								Total (£m)	222.2