EDUCATION POLICY INSTITUTE

Analysis paper: preliminary research findings on education recovery

Education Policy Institute

April 2021

Research supported by

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England Needs £10bn-15bn Funding Boost To Support Education Recovery

Next month, EPI will be publishing its first report on the extent of lost learning during the pandemic, the long-run economic cost and recommendations on how the government should support the education sector and wider public services to mitigate those effects and close the disadvantage gap.

Ahead of our detailed report, we set out the scale of the challenge and the level of ambition required by the government if it is to both reverse the learning loss caused by the pandemic, and also address the deep-rooted inequalities that left many young people acutely vulnerable when schools were required to close to most pupils.

The emerging evidence on lost learning paints a worrying picture which the government cannot afford to ignore. Without massive policy interventions now, we could all be poorer than we hoped in the future, particularly today's young people. We would also have significantly less money to spend on public services.

This is not, however, a forecast of inevitable doom and gloom for today's children. It is meant as a call to action for the adults and policymakers of today. Indeed, the historical evidence suggests that long-run costs can be mitigated or eliminated if this crisis is used as a catalyst for sustained improvements in the quality of schooling.

How far behind are children?

The Department for Education recently published analysis carried out by EPI using Renaissance Learning's Star Assessment data, which looked at pupils' attainment in the first half of the Autumn 2020 term, compared with pupils in previous years (essentially comparing pupils affected by the pandemic to those who were not). The available sample sizes mean that the analysis is focused on year groups 3 to 9.

Once we controlled for usual learning loss which pupils tend to experience after the summer holidays, we found that:

- All year groups experienced a learning loss in reading. In primary schools, this was typically between 1.7 and 2.0 months, and in secondary schools (years 8 and 9), 1.6 and 2.0 months respectively.

- The learning losses in mathematics were greater. We estimate that, on average, pupils in primary schools experienced a learning loss of just over three months. We were unable to derive robust estimates for pupils in secondary school in mathematics due to small sample sizes.

- There were also some regional disparities in the level of learning loss in reading, with pupils in the North East and in Yorkshire and the Humber seeing the greatest losses.

- We also found that schools with high levels of disadvantage experienced higher levels of learning loss than other schools, particularly in secondary (2.2 months in schools with high rates of free school meal eligibility and 1.5 months in schools with low rates of free school meal eligibility).

Further analysis of this data, including a break-down of results by pupil characteristics, will be published by the DfE later in the spring.

EPI has also recently received the Renaissance Learning assessment data for March 2021. This will help us to identify the extent of learning loss during the most recent period of school closure between January and March 2021. This will provide us with a much better sense of the scale of learning loss over the period of the pandemic, and should also be used to inform the scale and targeting of the government's recovery plan.

Our findings are so far consistent with a number of other reports which have also sought to compare children's skills in Autumn 2020 with what we'd normally expect. This emerging evidence is quite consistent, showing that primary school age children were about 1-3 months behind in their literacy and numeracy skills, they were likely to be further behind in maths, and pupils from disadvantaged backgrounds were furthest behind, as had been widely predicted.

We also know, from data that has been collected throughout the pandemic, that young people's wellbeing has been affected over the past year. A number of studies have found that wellbeing has fallen as the pandemic has progressed and diagnosable mental health problems have become more prevalent.[1]

There is, however, lots of uncertainty too. We know remarkably little about lost learning amongst older pupils (particularly those in Key Stage 4). Learning loss could be lower for this group if remote schooling was more effective, but some pupils could equally have got stuck and disengaged from different subjects, including English and maths, but also in other subjects where we do not have any data on learning losses. There is little hard evidence to show whether improved remote learning this term led to improvements. There is also the possibility of significant inequalities and disengagement as a result of heavily localised disruption over the 2020 autumn term. Some pupils might only have been in school for a matter of weeks over the past year. More evidence is required to properly understand these issues.

With this uncertainty in mind, we create three different scenarios for lost learning over the last year based on pupils missing 23 weeks of normal face-to-face schooling and different assumptions for the effectiveness of remote schooling. These are based on the rate of learning loss observed after the first lockdown:

- **Optimistic scenario** (remote schooling is 80 per cent as effective as normal schooling): Pupils are just over a month behind.
- **Central scenario** (remote schooling is 50 per cent as effective as normal schooling): Pupils are about 3-4 months behind.
- **Pessimistic scenario** (remote schooling is 30 per cent as effective as normal schooling): Pupils are about 5 months behind.

[1] Waite et al, 2020; Raw et al, 2021; Newlove et al,; 2021NHS Digital, 2020

What will be the long-run consequences?

The precise long-run economic consequences of current likely learning losses are uncertain, but all the evidence points to them being substantial. Building on IFS analysis, we assume an 8 per cent increase in adult earnings for each additional year of schooling, the average for high-income countries. UK-specific evidence shows higher returns of 10-15 per cent based on increases in the school leaving age. This body of evidence further suggests that most of the returns to schooling are likely to reflect skills gained rather than just being a signal of innate ability.

Based on these assumptions, our range of scenarios for lost learning would result in lost lifetime earnings of 1 per cent in the optimistic scenario, 2.4 per cent in central scenarios and 3.4 per cent in the pessimistic scenario.

What this means in economic terms is hard to calculate due to high levels of uncertainty about future levels of lifetime earnings and how much we value future income. We assume two quite different figures for expected lifetime earnings based on recent IFS modelling: £780,000 and £1.5m per child in school. This range reflects uncertainty about the future and how much we value income in the future.

Based on these figures, the long-run cost of lost learning ranges from £8,000 (under the smallest figures for both lifetime earnings and lost learning) to over £50,000 per child (the highest figures for lifetime earning and lost learning). This equates to a total long-run cost between £62bn and £420bn across the 8 million children in school in England.

Large as they are, these are likely to be significant under-estimates of the true long-run costs of lost learning. The evidence on returns to schooling mostly relates to situations where small groups of individuals have been affected by reforms to school ages. When applied to an entire generation of young people across different ages, there are likely to be further costs in terms of reduced productivity, investment and innovation leading to lower economic growth. Estimates including these effects put the full long-run cost of lost learning at more like £3 trillion over an 80-year period. There is even more uncertainty around these estimates, but extremely large costs are entirely plausible.

Furthermore, we know there are many wider benefits to higher levels of schooling and education, including improved health, civic engagement and many other factors.

There are also likely to be significant inequalities, which could introduce further costs. For example, even a small increase in disengagement amongst young people could be highly damaging and persistent. Research has showed the high costs of young people not being in employment, education or training ("NEET"). Considerable time and money has been spent on this problem.

Learning from past crises and other countries

If these figures seem implausibly large, it is worth looking at the experience of other countries to crises. Nationwide teacher strikes in Argentina between 1983 and 2014 led to pupils missing out on about half a year of schooling, on average. This led to reduced educational attainment and reduced lifetime earnings of 2 per cent for women and 3 per cent for men. Children in Germany and Austria saw massive disruptions to schooling as a result of World War 2, with research showing that a full year of lost schooling led to 9-10 per cent lower earnings later in life. Crucially, there is little evidence of any coordinated catch-up activities after these disruptions so they can be seen as

uncompensated effects of lost learning. This evidence suggests our range for the likely long-run effects of lost earnings (1.0-3.4 per cent) without extra policy action is quite plausible.

There are reasons to be optimistic too. In the wake of the devastation caused by Hurricane Katrina, pupils test scores understandably fell. However, these turned into long-run positive effects as the crisis was used as a trigger to improve a failing school system. The Christchurch Earthquake in New Zealand destroyed many school buildings, but ultimately led to massive cooperative efforts between schools and teachers that had to share facilities. Modelling further implies that significant and sustained parental efforts can reduce the long-run effects on earnings to about 1 per cent (our optimistic scenario).

In West Germany in the 1960s, many states implemented two short school years to switch to a September start date. This led to reduced schooling time of about 2/3 of a school year. Surprisingly, there is little evidence of any long-run effects on earnings or employment. However, teachers and schools made preparatory plans to cover the same curriculum in shorter school years, primary grade repetition increased for those unable to cope with the faster pace of learners and many colleges/universities implemented extra foundation years. There is limited evidence that the curriculum was scaled back (e.g. in Schleswig-Holstein, pupils only had to study 2 authors, rather than the normal 3, for the Great Latin exam in year 13).

The international evidence therefore shows that long-run negative effects are considerable, but can be mitigated by significant government, school and parental responses. In other words, catch-up is not a natural process. It requires active and sustained efforts.

How much should we spend on education recovery?

Current government plans imply catch-up spending of about £1.7bn or nearly £250 per pupil in England. Our analysis and international benchmarking implies that these plans need to be much larger to have a real chance of catching up on lost learning.

To put the planned additional expenditure into context, consider that the annual schools budget in England was about £48bn in 2020-21. In our central scenario, pupils have missed out on about 3-4 months of effective learning. In other words, we'd normally spend about £12-16bn delivering this, or in the range of about £1,500 or £2,000 per pupil.

The question is then whether expenditure on this scale would be needed to achieve the expected level of learning recovery.

First, there is a strong body of evidence showing that extra school spending can lead to significant improvements in long-run outcomes, particularly amongst disadvantaged pupils. UK evidence based on the late-2000s implies that an extra £1,000 spending per pupil can improve primary test outcomes by 30-35 per cent of a standard deviation (equivalent to about the assumed 3-4 months of learning loss in our central scenario). That might imply a spending of more than £10bn in today's money, maybe less if the learning loss turns out to be lower. However, other US evidence implies lower effects of spending and a need for even greater spending, with an extra £6,000-£7,000 over ten years improving educational outcomes by the equivalent of about 2-3 month educational progress. That would equate to almost a whole extra year of the schools budget spread over ten years.

Second, other countries are already engaging in significant levels of education recovery investment. The US has recently allocated about $122 bn in extra funding for schools to aid reopening and catch-

up (the equivalent of about £1,600 per pupil in K12 education). The Netherlands has announced an education recovery package equivalent to more than £7bn or over £2,500 per pupil.

The range of these figures show that there is no single or simple answer to the question as to how much money we should be spending on education recovery. The only reliable way of doing this is through collating all the detailed policies and interventions needed for recovery. However, our judgement is that £10-15bn would represent a useful benchmark or guide for the required scale of an education recovery package to help pupils catch-up on lost learning in England. This is based on what we'd normally spend, the academic evidence on the effects of spending and the plans of other countries. Furthermore, the sheer scale of the potential long-run costs without significant policy action (an absolute minimum of £62bn and potentially into the trillions) provide a rock-solid case for investment in the tens of billions *if* it can genuinely mitigate lost learning. In many ways, this demonstrates the incredible long-term value of investing in education, far larger than most infrastructure projects.

A recovery package of £10-15bn also includes support for other areas and phases of education. The estimated long-run economic costs are just the costs of lost learning for today's school-age children – they do not take into account of the effects of the pandemic on mental-health, well-being, the early years, or post-16 education, which would also require support.

But a policy or funding package which only seeks to reverse the impact of the pandemic will not go far enough. In the summer of 2019, disadvantaged children were already over 18 months, on average, behind their more affluent peers by the time they sat their GCSEs. That gap was already starting to widen well before the onset of Covid-19.

And so we need not only a plan for education recovery, but also resilience, ensuring that all young people are given the opportunities and support they need to succeed.

The main qualification to this is that such a package for recovery can only be justified if the underlying set of activities and interventions actually do help pupils catch-up. The proposed package must therefore be based on solid and robust empirical evidence as to their effectiveness. We must also be confident that we can recruit and retain the staff needed to deliver the package. This is no mean feat given the scale of package we are proposing. This strongly suggests that a multi-year package will be required: we propose that the recovery package of £10-15bn spans a three-year period. To enable activities, interventions and plans to begin from September 2021, this multi-year package will need to be put in place soon, and certainly well before the coming Spending Review this Autumn.

What should recovery and resilience look like?

At the heart of the government's support for schools should be a focus on what matters most – teacher quality. The most effective way to improve attainment and narrow the disadvantage gap in schools is by having the best teachers and so we need a bold investment in high-quality Continuous Professional Development for teachers. This, in turn, enables them to deliver evidence-based interventions in the classroom and across the school, including improving their own practices, supporting pupils' social, emotional and mental health needs and managing behaviour, and working in partnership with parents to support learning and wellbeing. The expansion of one-to-one tuition should be continued, although there is scope to review the current delivery model to secure maximum impact.

But this needs to be coupled with more time for pupils to engage with their peers through sports and social activities as well as academic support. The government must make additional funding available for before and after school clubs, as well as a much more ambitious and wide-reaching programme of summer activities run through (but not necessarily by) schools.

Over the longer term, we need more targeted support for vulnerable pupils through additional funding, and a high-quality teaching, pastoral and mental health workforce.

But we cannot leave schools alone with the responsibility to address societal inequalities. We need high quality, accessible early years provision which is coupled with early intervention services that support the whole family. We also need more funding for post-16 provision, particularly for disadvantaged pupils and better support for young people as they make their way from the education world into employment.

Finally, we need an urgent and serious cross-government child poverty strategy that reverses the current upward trend of child poverty and ensures that no child ever goes without food, safe housing or education again.

Our May report will set out in detail the policies which we believe need to be put in place with the financial support which we judge to be necessary to deliver education recovery.

Education Recovery Plans in Wales, Scotland and Northern Ireland

Whilst our proposals are focused on education recovery in England, there are also strong implications for addressing the similar set of challenges facing policymakers in Wales, Scotland and Northern Ireland.

First, if the UK government were to allocate £10-15bn for a multi-year education recovery package in England, this would result in additional funding for the devolved administrations through the Barnett formula:

- Scotland - £1bn-£1.5bn
- Wales - £600m-£900m
- Northern Ireland - £350m-£500m

Just as with the figures for England, these represent useful for benchmarks for how much is likely to be needed in total in each country for education recovery.

Many of our recommendations are relevant to all countries, such as a need for a focus on the quality of provision, continuous professional development, disadvantaged learners and well-being. The precise plans will, however, need to be suited to the specific challenges and context in each country. For example, policymakers in Wales will undoubtedly want to place a high emphasis on professional development in preparation for the rollout of the new curriculum from 2022. In Scotland, policymakers will also need to respond to a major report by the OECD on the Curriculum for Excellence, due to be published in June 2021. In Northern Ireland, policymakers will need to respond to an ongoing review of educational under-achievement and have already placed a high emphasis on a resumption of youth services in light of recent violence.