The Impact of COVID-19 on Learning: A review of the evidence
About the Education Endowment Foundation

The Education Endowment Foundation (EEF) is an independent charity supporting teachers and school leaders to use evidence of what works—and what doesn’t—to improve educational outcomes, especially for disadvantaged children and young people.
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For two years, schools have been grappling with real uncertainty. Questions from whether they would be open one day to the next, to how best to support learning, both remotely and in-class, have loomed large over daily life in schools.

Amidst these challenges, teachers and school leaders have worked tirelessly to mitigate the negative impacts of the pandemic on the children and young people in their care. Initially, they did so whilst working without a map, lacking evidence of how their pupils’ learning had been affected.

However, over time, studies have been conducted and research evidence published. This has enabled us to begin to piece together a more robust understanding of how partial school closures have affected children, and the measures that will need to be taken to facilitate their recovery and move learning forwards.

At this stage in the pandemic, we are in a position to put these findings together. In addition to national trends in learning, we have access to insights into how schools in different regions have been affected, trends across setting types, and the impact on socially disadvantaged pupils.

It is more important than ever that practitioners, policymakers and other organisations working with schools have access to the information they need to make sure that their efforts and resources are targeted towards meeting their pupils’ needs.

It is our hope that this document is a helpful complement to schools’ ongoing diagnostic assessment, supporting teachers and school leaders to effectively strategise and implement their approach to recovery for the good of all their pupils, particularly the most disadvantaged.

Professor Becky Francis
Chief Executive
Education Endowment Foundation
Schools in England have experienced unprecedented disruptions due to the coronavirus (COVID-19) pandemic. There were two periods during which in-person learning was restricted for the majority of pupils: first for 14 weeks in spring 2020; and then for eight weeks in winter 2021.

During these periods of partial closure, many pupils experienced some form of remote learning. Even when schools re-opened fully, significant challenges remained due to high levels of staff and pupil absence.

Research shows that COVID-19-related disruptions have worsened educational inequalities: the attainment gap between disadvantaged pupils and their peers has grown since the onset of the pandemic.

This report provides a summary of the findings from a range of studies that looked at the impact on learning during this period.

Key findings

- COVID-19-related disruption has negatively impacted the attainment of all pupils, particularly those from disadvantaged backgrounds.
- There is evidence that the attainment gap between disadvantaged students and their classmates has grown.
- There is some evidence that in primary schools, younger year groups (Key Stage 1 pupils) have been the most significantly affected, with lower attainment than previous cohorts across all subjects. Other recent research shows particularly negative impacts for pupils in KS3 (DfE, 2021, 2022).
- Most evidence shows that despite some recovery by summer 2021, on average pupils were not performing as well in both maths and reading as pre-pandemic cohorts.
- Aside from the impact on attainment, which this report focuses on, teachers have frequently reported concerns around the effect on pupil wellbeing. There is also emerging evidence that suggests the pandemic has negatively impacted children’s mental health.
Evidence overview

Figure 1 highlights the timeline during which different studies captured data. Most of the included studies measured COVID-19’s impact on learning by comparing pupils’ average attainment to that of children and young people from previous pre-pandemic cohorts. This has allowed many studies to estimate how far behind today’s pupils are in terms of months’ progress. Different studies have used a variety of standardised assessments of maths and reading comprehension to investigate how learning has been affected. The majority of studies focussed on outcomes in primary schools (five-11 year-olds); there is less evidence on the pandemic’s impact on secondary education (11– to 16–year olds).

Figure 1: Key studies on the impact of COVID-19 on attainment in 2020/21*

* This infographic presents some of the key research studies and the data collection points involved in each project. The graphic only shows the most recent publication date but there were also published interim reports. See full references for more information.

Key dates are marked for reference however significant ongoing disruptions have been experienced throughout this period.

1. FFT, Teacher Tapp and EEF study (2022) focussed on the gap between economically disadvantaged pupils and their peers in Years 2 to 6.
Disadvantaged pupils

Studies show that Covid-related disruption has negatively impacted the attainment of all pupils, particularly those from disadvantaged backgrounds (DfE, 2021; NFER, 2021; FFT, 2022; DfE, 2022).

A recent DfE study (2022) suggests that pupils have experienced a greater impact in areas of high deprivation.

There is evidence that the attainment gap between disadvantaged pupils and their classmates has grown since the onset of the pandemic (DfE, 2021; RS Assessment, 2021; NFER, 2021; FFT, Teacher Tapp and EEF, 2022; DfE, 2022).²

‘The extent to which disadvantaged pupils lost learning by the summer term appears to be equivalent to undoing a third of the progress made in the last decade on closing the gap in primary schools’.

DfE (2021)

Pupils have made progress since returning to in-person learning, but by summer 2021, they continue to be behind in their learning compared with what would be expected in a typical year. Time back in class has not yet made up for the disproportionate learning loss experienced by disadvantaged pupils.

Figure 2: Attainment gaps in year 2 over time*

* This infographic represents findings from NFER (2021), DfE (2021) and FFT, Teacher Tapp and EEF (2022). The DfE (2021) study did not provide breakdowns by year group but estimated the attainment gap in primary grew by 0.5 months in maths and by 0.7 months in reading. The NFER study (2021) estimated the attainment gap in year 2 grew by 1 month in reading and by 1 month in maths. The FFT study (2022) estimated that the attainment gap in primary maths widened by 1 month, while they did not find a discernible change in the gap in reading.

² The FFT, Teacher Tapp and EEF (2022) study found no discernible change in the disadvantage gap for primary reading.
In our current Key Stage 1 cohort, more pupils are struggling to focus and retain information. We’re also seeing a real difference in progress between pupils from disadvantaged backgrounds and their peers, with the pupils from families who were able to support home learning making better strides towards recovery.

Colleagues are working hard to pitch their teaching appropriately for all pupils, challenging those that thrived during lockdown, whilst also supporting those who have fared worse over the course of partial school closures. As a school, our priority continues to be combining high quality teaching with targeted academic support to benefit all of the pupils in our care.

Pimlico Primary, London

Why might the attainment gap have widened?

Evidence from before the pandemic tells us that partial school closures generally lead to a widening of the attainment gap between disadvantaged pupils and their peers (EPI, 2020).

There are a number of factors that may have contributed to the attainment gap widening during this period, particularly in the early stages of the pandemic. These include:

- Differences in schools’ approach to, and pupils’ engagement with, remote and online learning (Francis, 2020; NFER, 2020)
- Varying access to the technology needed to complete online learning (Sutton Trust, 2020)
- Disparate levels of parental support (Sutton Trust, 2020b)
- Lack of access to a quiet, safe space to learn (NFER, 2020b)
Some studies suggest that by summer 2021, pupils in Key Stage 1 had fallen further behind in comparison with Key Stage 2 children. These children are now in Years 2 and 3. 

(RS Assessment, 2021; Juniper, 2021; FFT, 2022)

However, a recent study showed particularly negative impacts on reading for secondary school students.

(DfE, 2021, 2022)

Few studies have examined effects on reception aged children. A recent study funded by the EEF and conducted by NIESR has found that fewer children in the 2020/21 cohort are meeting levels across all EYSFP outcomes compared to children in 2018/19.
Due to partial school closures, pupils in Years 7 and 8 missed important opportunities in Key Stage 2 to become 'secondary ready'. The proportion of pupils who require support with decoding and reading fluency is rapidly increasing, creating a sense of urgency to prioritise high quality literacy teaching across subjects.

To address the issue, we are equipping all teachers with the necessary knowledge and skills to meet the growing literacy needs within the classroom. We truly believe that every teacher is a teacher of literacy and have therefore prioritised the development of explicit literacy instruction across the curriculum to support pupils to become strategic readers, resilient writers and confident speakers.

Manchester Enterprise Academy, Wythenshawe

The impact on Covid presented itself in a variety of ways in our classrooms, from challenges around resolving conflict between peers, to lack of fluency in reading and number work. This is particularly apparent for our lower Key Stage 2 children, whose entire experience of Key Stage 1 was disrupted.

One of the most significant challenges we have identified has been with children's writing, in particular, their handwriting. In pre-pandemic times, our children would enter lower Key Stage 2 having received regular explicit teaching with careful feedback throughout Reception and Key Stage 1, ensuring their readiness to build and grow a focus on composition. However, this current cohort of children have developed a range of handwriting styles in lockdown, due to long periods away from the careful monitoring and guidance of teachers.

To remedy this, we have focused on letter formation across the school, with teachers monitoring and providing feedback on children’s handwriting process, rather than the product.

Cragside C of E Primary School, Cramlington
The impact of COVID-19 on...

Mathematics, reading and writing

Overall, the evidence shows that Covid-related disruption has caused learning loss in both maths and reading, though there is some variability in different studies’ findings on which subject has been more affected. There is limited evidence on other subject areas.

Studies from FFT, Teacher Tapp and EEF, DfE, GL Assessment and Juniper Education found evidence that the pandemic has had a larger impact on primary maths than primary reading, with estimates of learning loss ranging from 2 to 3.5 months (DfE, 2021; FFT, Teacher Tapp and EEF, 2022; GL Assessment, 2021; Juniper Education, 2021).

Two studies reported that partial school closures had a greater impact on primary reading on average (NFER, 2021; RS Assessment, 2021).

It is difficult to interpret these findings together since the studies look at different year groups. For example, the NFER study focussed on Years 1 and 2 and the RS Assessment study looked at Years 1 to 6.

Most evidence shows that by summer 2021, pupils had not yet recovered from the learning they had missed during 2020 and 2021 in both maths and reading. However, evidence on the rate of recovery in these subjects also varies.

Some studies (DfE, 2021; NFER, 2021) found that by summer 2021, more progress towards recovery had been made in maths than in reading. For example, NFER (2021) found pupils were only one month behind expected levels in maths by the end of the summer term compared to three months for reading.

However, other research found that attainment in reading was similar to pre-pandemic cohorts for Years 2 to 6 by the end of summer 2021 (RS Assessment, 2021).

A recent study (DfE, 2022) found that in secondary reading, learning losses have increased since the end of the 2021 summer term.

What about writing?

While most results are limited to reading and maths, there is some evidence that the writing outcomes for primary-aged and Year 7 children were lower than expected compared to previous year groups (Christodoulou, 2021, 2022). Christodoulou (2022) also found some evidence of a widening of the disadvantage gap for Year 1 children in writing. There are gaps in the evidence for all subjects outside of literacy and maths—likely caused by the limited use of standardised online tests in other subjects.

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3. The NFER study found by summer 2020 pupils had made 1 month progress.
4. The FFT, Teacher Tapp and EEF study (2022) found the disadvantage gap for maths widened since the onset of the Covid-19 pandemic which represents an increase of between 4% to 17% in the pre-covid 19 disadvantage gap.
In the wake of the pandemic, we have noticed pupils struggling with vital social aspects of nursery, with some disliking personal touch, or interacting in large groups of children. There have also been many who have struggled with separation anxiety from their parents.

There also appears to have been a negative impact on our pupils’ speech and language development after many months of limited exposure to language. Their expressive language, which they use to communicate during role play activities or in small world play seems to have been particularly affected.

Highfield Nursery School, Suffolk

Why are there inconsistencies between the results?

- The assessment data and age profiles used to measure attainment differs between the studies.
- Slight differences in the time periods between assessments could also influence the results, especially during the pandemic when rapid changes have occurred.
- While some studies have focussed on the same year groups, there will be variation in the characteristics of the sample that could influence the findings, for example, socio-economic background.
- We are still in the early stages of researching the impact of COVID-19.

Therefore, findings should be interpreted and compared with caution.
Two studies have investigated regional disparities in the extent of learning loss experienced. This map represents the most common areas that studies found that experienced the greatest learning losses at the end of the summer term 2021 (DfE, 2021; RS Assessment, 2021).
Attendance

- Pupil attendance has fluctuated throughout the pandemic—usually correlating with overall prevalence of covid cases (Roberts and Danechi, 2022).

- At no point since the start of the pandemic has school attendance been returned to the average attendance reported in census returns in 2019/20 (95%).

- At the end of March 2022, attendance was 88.6% (DfE education statistics).

- In addition to absences caused by children or close contacts catching COVID-19, research from Ofsted has indicated that top causes of absence included anxiety, disengagement from education during the pandemic and other specific health needs (Ofsted, 2022).

Physical development

- There is strong evidence that the pandemic had an impact on physical development outcomes. A review by the Early Intervention Foundation highlighted evidence of decreases in food security, as well as international evidence around sleep quality and levels of physical activity (EIF, 2021).

- The National Child Measurement Programme (NHS Digital, 2021) found that obesity in reception aged children had increased from 9.9% in 2019/2020 to 14.4% in 2020/2021, and that children living in the most deprived areas were more than twice as likely to be obese than those living in the least deprived areas.
## Wider impacts

### Pupils with SEND

- There is some qualitative evidence that the provision for children with special education needs or disabilities (SEND) and their families was disproportionately impacted by the COVID-19 lockdowns (Ofsted, 2021). There is limited evidence on the impact on the attainment of pupils with SEND. There is some evidence to indicate that children with SEND’s academic outcomes were affected as much as those of other pupils (DfE, 2021).

### Mental health

- It is recognised that the Covid-19 pandemic has had wider impacts on pupils aside from attainment, which this report focuses on. There is evidence that suggests the pandemic has negatively impacted children’s mental health. More research is needed to understand the long-term effects of the Covid-19 pandemic on children’s mental health and the influence of specific risks factors as they evolve over time (Bussières et al., 2021).

- While there is limited data, teachers have identified mental health as a significant challenge in the classroom.

### International research

- International research has also shown that the impact of COVID-19 on learning is a global challenge: studies from the U.S., Netherlands, and Belgium have demonstrated the detrimental impact of COVID-19 on attainment.8
Wider impacts

5. NWEA (2021); Maldonado and De Witte (2020); Engzell, Frey and Verhagen (2021); Curriculum Associates (2021); Kogan and Laverty (2021); Pier, Hough, Christian, Bookman, Wilkenfeld and Miller (2021); Domingue, Hough, Lang and Yeatman (2021).
Support for schools

The EEF have developed a range of practical resources, opportunities and localised support to help schools as they map out and execute their education recovery plans.

Moving Forwards, Making a Difference: A Planning Guide for Schools, 2022–23

This new guide is designed to support teachers and school leaders in identifying and addressing the key areas for development in their setting for the coming academic year. It offers practical advice and signposts evidence-informed resources on a variety of areas of teaching practice, from ensuring high quality teaching to removing non-academic barriers to attainment.

eef.li/school-planning

The Teaching and Learning Toolkit

Our newly updated Teaching and Learning Toolkit is designed to support teachers and school leaders to make decisions about how to improve learning outcomes. Based on real life data about what has happened when particular approaches have been used in classrooms, the Toolkit gives ‘best bets’ for what might work in your own context.

eef.li/toolkit

Guidance Reports

We have produced a total of 17 guidance reports covering a broad range of teaching and learning areas, from feedback and behaviour, to literacy and maths. Complete with actionable recommendations, these reports distil key lessons from the evidence base to offer teachers and school leaders practical advice on how to improve teaching practice. The reports are accompanied by tools, resources, and training to support implementation.

eef.li/guidance
Register to take part in a recruiting EEF trial

English schools can sign up to take part in one of our current trials, which test the effectiveness of high-potential educational programmes and interventions to generate new evidence of ‘what works’ in the classroom.

https://eef.li/projects

The EEF Guide to the Pupil Premium

The EEF Guide to the Pupil Premium is a practical guide to support schools to develop their pupil premium strategy based on the best evidence, and to meet updated DfE requirements.

https://eef.li/pupil-premium

1 Teaching
   For example
   Professional development
   Recruitment and retention
   Support for early career teachers

2 Targeted academic support
   For example
   Structured interventions
   Small-group tuition
   One-to-one support

3 Wider strategies
   For example
   Behaviour approaches
   Breakfast clubs
   Increasing attendance
Localised support

Research Schools Network

The Research Schools Network is a network of schools which support the use of evidence to improve teaching practice.

The network aims to lead the way in the use of evidence-based teaching, building affiliations with large numbers of schools in their region, and supporting the use of evidence at scale.

Research Schools work with other schools in their areas to help them use evidence more effectively to inform their teaching.

They do this by:

- encouraging schools to make use of evidence-based programmes and practices through regular communication and events; and
- providing training and professional development for senior leaders and teachers on how to improve classroom practice based on the best available evidence.

[https://eef.li/RSN](https://eef.li/RSN)


References


[13 April, 2022]


[13 April, 2022]


