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Learning loss since lockdown: variation across the home nations

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CEP COVID-19 ANALYSIS

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- Empirical analysis of secondary microdata, bespoke social mobility surveys and administrative school attendance data reveal the extent learning losses that have evolved in the four nations of the UK over the year of the pandemic. They are sizable in all four nations, with a common feature of disadvantaged pupils suffering particularly large losses during two periods of school closures, the durations of which varied across the home nations.
- Disruption to schooling between March 2020 and April 2021 was unprecedented in its scale, with most pupils missing over half of their expected days in the classroom. Based on the nations' attendance policies, the following maximum number of classroom days were lost over one calendar year: 110 days (England); 119 days (Northern Ireland); 119 days (Scotland); 124 days (Wales). These compare to a full year during normal times of 190 classroom days.
- Considering learning undertaken at home and in the classroom, pupils in England, Scotland, Wales, and Northern Ireland all experienced very large learning losses over the course of the year. On average, pupils in England lost 61 days of schooling. Larger average losses occurred in Scotland (64 days) and Wales (66 days), while pupils in Northern Ireland also lost 61 days.
- The differences across the nations arise both because of variations in learning loss at home, and due to education policy differences (both historical differences in term times and from specific policy choices during the pandemic). The early return to school of English pupils in the second round of school closures in spring 2021 is a key factor in this. During this second round of school closures in 2021, the poorest pupils in England experienced lower learning loss than the most affluent pupils in the rest of the UK (34.9 percent compared with 38.6 percent).
- Rising school absences in June 2021 once again prompt discussion about credible policies to address learning losses. Survey responses reveal that just over half (53 percent) of 10,000 adults support extending the school day, with 54 percent of English respondents expressing support, 50 percent in Northern Ireland, 52 percent in Scotland and 51 percent in Wales. Seven in ten (68 percent) respondents in England support allowing greater flexibility for pupils to repeat a whole school year. Support for a repeat year is almost identical in Scotland (68 percent) and Wales (69 percent) and a little lower, but still a majority view, in Northern Ireland (58 percent).

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1. Introduction

This briefing presents evidence from the four home nations of the UK on the scale and nature of losses in education that have occurred since the March 23 lockdown in 2020. The purpose of the briefing is twofold; firstly, to appraise specifically how education outcomes have evolved during the different periods of lockdown and school closures that have occurred during the year of the pandemic; and secondly, to compare and contrast the scale and range of losses across the UK nations.

The findings come from official attendance statistics from each nation combined with the latest waves of data from a nationally representative longitudinal study (Understanding Society) and two bespoke surveys fielded in September 2020 and January 2021 (the LSE-CEP Social Mobility Survey).¹ The different policies adopted in the four nations about school opening and closure dates are studied and used to assess the extent to which they have led to different degrees of lost learning for the respective nations' pupils.

Looking across three national lockdown periods (March-June 2020, November 2020, and January-March 2021) and two periods of school closures (March-June 2020 and January-March 2021), there is evidence of sizable education losses in all four nations of the UK. Average learning losses were highest during the first period of closures in spring 2020, then moved to be more or less negligible during the autumn 2020 term when schools were re-opened. As schools shut again in 2021, large learning losses again emerged. In both closure periods, differences between pupils from different socioeconomic groups were sizeable.

Once differences in home schooling are accounted for, pupils in English schools are shown to have experienced lower average learning losses than their peers in Scotland and Wales, with similar losses experienced in Northern Ireland. Worryingly, the large socioeconomic divides in learning loss that occurred under the first lockdown were compounded further by the second round of school closures in the first months of 2021. These gaps in learning loss across the home nations result both from variations in learning loss at home and education policy differences. These policy differences arise from historical differences in term times and from specific policy choices concerning school attendance. These are quantified under different policy scenarios in this briefing.

Overall, it is shown that big overall learning losses occurred in all four nations in the year since the first lockdown. These raise significant concerns about scarring effects that may emerge as a result in the future. The public are aware of this and survey evidence is reported where they strongly express desire for education policies to ensure that such scars do not occur and harm the future education and social mobility prospects of the Covid generation of school children.

2. Education Losses

One of the defining impacts of the pandemic has been the unprecedented, and widespread, closure of schools to most pupils. The education loss due to these closures is considered firstly by assessing school opening and closure dates, secondly by documenting official school attendance figures, and thirdly using data on daily learning rates (combining home and classroom learning) reported by parents across the nations of the UK in Understanding Society.

¹ The LSE-CEP Social Mobility surveys are representative surveys of 10,010 (September 2020) and 10,015 (January 2021) individuals aged 16 to 65.

Missing classroom days

Key school dates for the year (excluding half terms and Easter breaks) are set out in Table 1. Reviewing the key school dates and school attendance data for the calendar year permits a calculation of maximum total numbers of weeks missed across the different nations due to the education policies each nation chose to adopt. The extent of schooling disruption between March 2020 and April 2021 has been unprecedented in its scale. It differed across the four nations because education is devolved across the UK with variation in national policies between England, Scotland, Wales and Northern Ireland. These include historic differences in term dates, and decisions made of when to re-open schools.

The term dates used are those for the majority of schools in each of the nations and so the calculations of classroom days missed apply to the majority of pupils. Pupils in particular year groups prioritised for earlier returns will have missed fewer classroom days. These include for example Reception, Year 1 and Year 6 in primary schools; Year 11 and Year 13 in secondary schools; and vulnerable pupils and pupils of key workers.

Summer term 2020

Using these standard term dates, the maximum weeks of missed classroom teaching during the year can be computed for each nation. During the first closures in spring 2020, the majority of pupils in England missed up to 71 days (just over 14 weeks); while most pupils in Northern Ireland, Scotland and Wales and Northern Ireland missed up to 60 days (12 weeks), 59 days (12 weeks) and 69 days (just under 14 weeks) respectively.

Autumn term 2020

Schools across the UK were open to most children during the autumn term of 2020, although attendance rates throughout the term fell short of their usual levels. There were a number of local lockdowns due to localised outbreaks of Covid where schools were closed. Many pupils and teachers meanwhile self-isolated when individual Covid cases were reported at schools.

Spring term 2021

The patterns seen in the first bout of closures were partially reversed during the second period of closures from January to April 2021. The second closure period ended earlier in England than in the UK's other three nations. As a result, most pupils in England missed up to 39 classroom days (just under 8 weeks) over the course of the spring term. This falls short of the comparable losses for most pupils in Scotland, Wales, and Northern Ireland who missed up to 60 days, 55 days and 59 days respectively (10 and a half weeks).

Total figures for calendar year of the pandemic

Combining these figures from 23 March 2020 to 23 March 2021 the following days were lost due to school closure over the calendar year: 110 days (England); 119 days (Scotland); 124 days (Wales); 119 days (Northern Ireland). These figures all compare to a full calendar year during normal times of 190 classroom days (with a further five days for teacher development). This equates to over half of school days missed.

Table 1: Key School Dates from March 2020 to April 2021

	England	Northern Ireland	Scotland	Wales
March 2020	Schools closed across the UK for all but vulnerable pupils and children of key workers (23 rd)	Schools closed across the UK for all but vulnerable pupils and children of key workers (23 rd)	Schools closed across the UK for all but vulnerable pupils and children of key workers (23 rd)	Schools closed across the UK for all but vulnerable pupils and children of key workers (23 rd)
April 2020	Start of summer term with restrictions still in place (20 th)	Start of summer term with restrictions still in place (20 th)	Start of summer term with restrictions still in place (21 st)	Start of summer term with restrictions still in place (20 th)
June 2020	Primary schools reopen with varied attendance (1 st) Year 10 and Year 12 pupils return (15 th)		Summer term ends (26 th)	School reopen with a third of pupils allowed to attend at any one time (29 th)
July 2020	Summer term ends (22 nd)	Summer term ends (1 st)		Summer term ends (22 nd)
August 2020		Pupils in examination years return to school (24 th)	Autumn term begins – all pupils back in school (11 th)	
September 2020	Autumn term begins – all pupils back in school (2 nd)	Schools reopen for all pupils (1 st)		Autumn term begins – all pupils back in school (1 st)
October 2020		Half term is extended leaving schools closed from the 19 th to the 30 th (19 th)		
December 2020	Autumn term ends (18 th)	Autumn term ends (18 th)	Autumn term ends (18 th)	Autumn term ends (18 th)
January 2021	Spring term begins – schools closed to all but vulnerable children and children of key workers (5 th)	Spring term begins – schools closed to all but vulnerable children and children of key workers (5 th)	Spring term begins – schools closed to all but vulnerable children and children of key workers (5 th)	Spring term begins – schools closed to all but vulnerable children and children of key workers (5 th)
February 2021			Phased reopening of schools begins with those in reception, year 1, and year 2 returning (22 nd)	Pupils aged between 3 and 7 return to school (22 nd)
March 2021	All pupils back in school (8 th) Spring Term ends (26 th)	Primary pupils and those in examination years at secondary school return (22 nd) Spring Term ends (31 st)	Secondary pupils back on part-time basis (15 th).	Remaining primary aged pupils and those in qualification years return to school (15 th) Spring Term ends (26 th)
April 2021	All pupils back in school (12 th)	All pupils back in school (12 th)	Spring Term ends (1 st) All pupils back in school (12 th)	All pupils back in school (12 th)

School attendance statistics

The restrictions put in place to quell the spread of Covid-19 had a large negative effect on school attendance, and partly continued even in periods when schools remained open for the majority of pupils. Figure 1 plots weekly attendance data separately for the four nations in each school week since 23rd March 2020.

The overall pattern of school attendance mirrors the key dates documented in Table 1. Attendance was high in the autumn term, when all nations reopened the school doors, and remained below capacity in periods of limited opening. Attendance was very low in the spring term of 2021, and the period stretching from March 23rd 2020 until the summer break. Figure 1 makes it clear there were different attendance patterns across the four nations during the closure periods.

More specifically, attendance rates in England during school closures were around twice the level of attendance rates elsewhere in the UK, driven by the opening of all schools in England, and (to a lesser extent) government policy permitting vulnerable children and children of key workers to attend school.

There is also a notable spike in attendance amongst pupils in England during the second closure period in 2021. This was driven by the decision to allow English schools to fully reopen prior to the end of the spring term. This was not mirrored in the other three nations. Scotland, Wales, and Northern Ireland did allow some pupils to return to school prior to the end of the spring term, but they did not follow England in fully reopening schools.

Differences also emerged in the first lockdown period. While all the nations allowed vulnerable children and children of key workers to attend school from March 23rd, attendance in England and Wales is much higher towards the end of the 2019/20 academic year. As shown in Table 1, both Wales and England relaxed restrictions on attendance as the year drew to a close by allowing those in primary school and years 10 and 12 to return (England) as well as allowing pupils to return on a partial basis (Wales).² Neither Northern Ireland or Scotland relaxed restrictions between 23rd March and the start of the new academic year.

While Figure 1 paints an interesting picture of attendance differences across the four nations, it is necessarily incomplete to accurately measure learning losses. As well as heterogeneity in attendance, there is the likelihood of differences in home learning environment across the nations. To better understand how learning loss differs across nations, it is important to assess the extent to which learning differed across the nations during school closure periods for those not attending school.

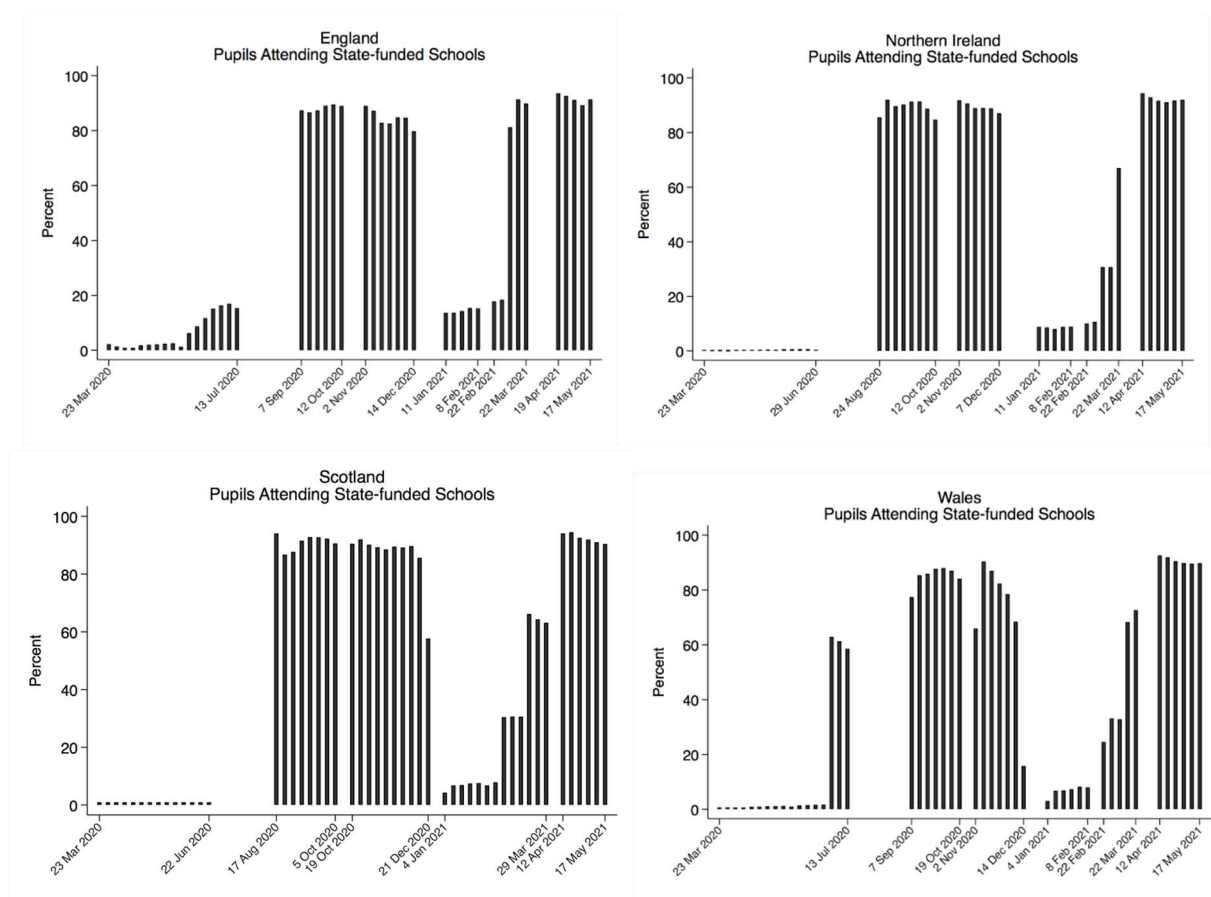
Daily learning losses (including learning at home and in school)

Differences in home learning can be assessed using microdata from the dedicated Covid waves released as part of the UK household longitudinal study (Understanding Society, USoc). USoc asks parents a battery of questions regarding home schooling in the two closure periods, together with questions regarding school attendance and home instruction during the autumn term when schools were open.³

² The way in which data was collected for Wales changed for the final weeks of the Summer term 2020. See the note to Figure 1 for discussion about the implications of this.

³ The surveys were fielded across multiple months with home schooling modules in April 2020 (corresponding to the first school closure period), November 2020 (corresponding to the mid-point of the autumn term), and January 2021 (the first month of the spring term).

Figure 1: Weekly school attendance in the four nations



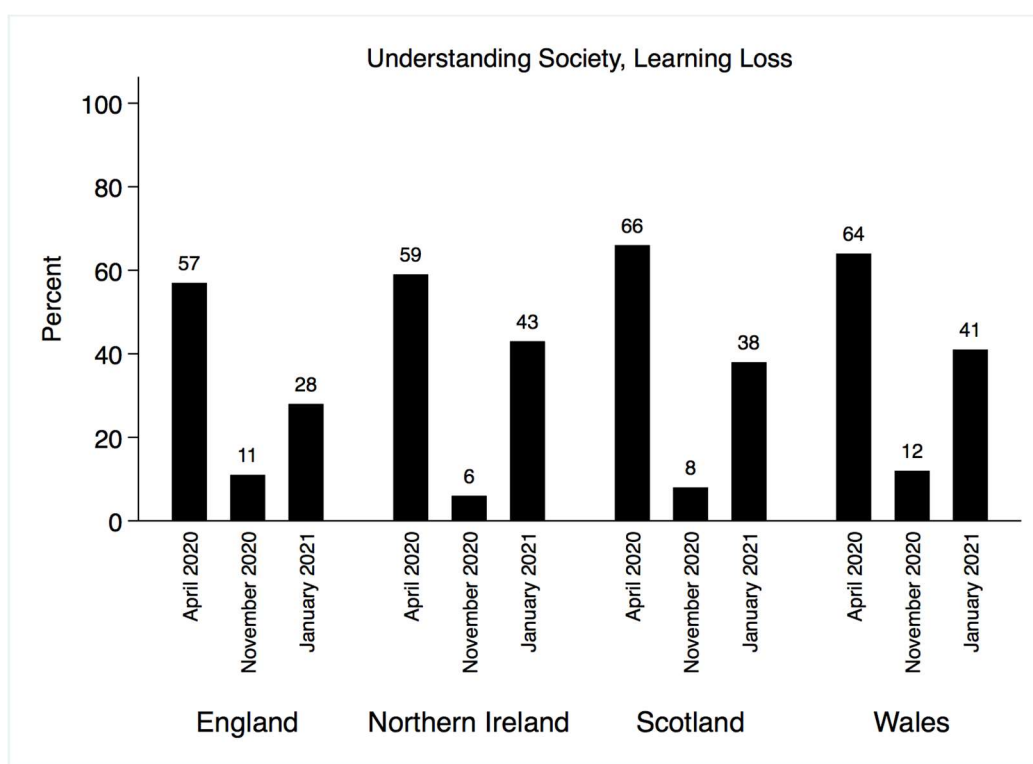
Notes: data covers all maintained schools. Data from Scotland is only available from the start of the 2020/21 Autumn term. Data for Scotland for the 2019/20 school year are imputed using Understanding Society. We take April attendance for Scottish students and extrapolate this to the entire period spanning 23rd March until the week commencing the 22nd June. Weekly averages are computed over days when schools are in operation i.e. inset days and bank holidays are excluded. Missing data points correspond to the periods in between the start and end dates of terms or half term breaks. For more discussion see the appendix. For the period beginning the 15th March 2021 to April 3rd, secondary pupils in Scotland attended school on a part time basis. We treat part time attendance as equivalent to half a day of attendance. When calculating percentages these pupils are given a weight of one half to represent part time schooling. Data are available at <https://www.gov.scot/publications/coronavirus-covid-19-daily-data-for-scotland/> and <https://explore-education-statistics.service.gov.uk/find-statistics/attendance-in-education-and-early-years-settings-during-the-coronavirus-covid-19-outbreak>.

Although attendance time series are comparable, caution must be applied when looking at the data for Wales from the 29th June 2020 to the 13th July 2020. The spike in attendance for these weeks reflects both a partial reopening of schools, but also a difference in the definition of attendance. For these three weeks, for Wales, attendance is calculated as the proportion of students attending on any single day during the week. Raw data are adjusted for the week commencing 2nd November. For this week data are provided for all students in years 8 and below (as those in years 9 and above were exempt from schooling). We rescale the raw data by multiplying through by the fraction of pupils in years 8 and below (using Welsh census data from 2019/20). Data are available at <https://gov.wales/pupils-present-maintained-schools-7-september-2020-12-march-2021> and <https://www.education-ni.gov.uk/publications/management-information-attendance-pupils-and-workforce-schools>.

The USoc data can be converted into measures of learning loss for individual pupils as they report whether children attend school and the number of hours per week they spend on schoolwork. These are converted into a measure where learning losses are defined as the percentage of normal schooling hours lost per day when compared with a 6-hour school day for 5 days a week.

Figure 2 shows average percentage daily learning losses for England, Northern Ireland, Scotland and Wales at the three key points in time. The periods correspond to the first full month of school closures during spring (April 2020), the midpoint of the autumn term (November 2020), and the re-closure of schools in 2021 (January 2021). The estimates can be read as the percentage of normal schooling hours received per day, once home schooling is accounted for, in each of the three points in time for which we have data. As those attending school are included in the estimates – these pupils are assumed to have a full day’s worth of learning – the statistics present a snapshot of learning loss at a single point in time averaged across all the respective nation’s pupils.

Figure 2: Learning losses during spring 2020, autumn 2020, and early 2021 for the four nations



Notes: See data appendix for further details on how learning losses are computed. Aggregate figures are produced using sample weights.

Overall, learning capacity due to the closure of schools during the first lockdown in 2020 fell sharply for all four nations. Learning losses were particularly large for Scotland and Wales, where on average pupils missed out on two thirds (respectively 66 percent and 64 percent) of the lessons they would normally receive. In England and Northern Ireland the learning loss was lower, but still of sizable magnitude, at 57 percent and 59 percent respectively.

As might be expected, the learning losses then fall dramatically during the autumn term (albeit not to zero) when schools returned across the UK.

Sizable learning losses are observed again during the third national lockdown and second round of school closures across the UK in early 2021, although these are lower than those experienced during the first school closures in 2020. Once again, school pupils in England suffered the lowest learning losses compared with the other home nations.⁴

The overall picture is therefore one of larger losses during closure periods in Northern Ireland, Scotland and Wales when compared with England. Two of the nations – Northern Ireland and Scotland – perform slightly better than England when schools re-opened in the autumn term.

The daily estimates of learning loss can be combined with the attendance numbers in Figure 1 to obtain estimates of lost days of schooling in each school term across the four nations. Multiplying the daily learning loss by the length of term in days produces estimates of losses for the summer term of 2019/20, the 2020/21 autumn term, and the 2020/21 spring term. As the focus is on days lost since first lockdown occurred on March 23 2020 the extra 10 days of the 2019/20 spring term are added to the length of the 2019/20 summer term. Nation specific estimates of home learning and absence rates were used to compute overall losses.⁵ This produces the following estimates for overall days lost: 61 days in England 61 days also for Northern Ireland, 64 days in Scotland and 66 days in Wales.

These are big overall learning losses in all four nations. They raise significant concerns about scarring effects they may have in the future. Existing research shows that even a few days extra learning loss can have a large impact on education achievement and life outcomes, and these big losses of around 60-65 days are much bigger than those typically studied (see, for example Lavy, 2015; Rivkin and Schiman, 2015.) Several studies have confirmed that learning losses suffered during the pandemic are manifested in stark gaps in attainment between children from poorer backgrounds and their more privileged counterparts (Rose et al 2021, Maldonado and De-Witte, 2020, Engzell et al, 2020). Our own estimates suggest a likely consequence to be significant decline in social mobility levels for younger generations (Elliot Major, Eyles and Machin, 2021).

Interestingly, the observed differences across nations arise as a combination of the different scale of mean learning loss and from education policy differences (both historical differences in term times and from specific policy choices during the pandemic). The early return to school of English pupils in the second round of school closures in spring 2021 is a key factor in this, as Table 2 below shows.

Table 2: Average Learning Losses by School Term

	England	Northern Ireland	Scotland	Wales
Total days	61	61	64	66
Of which:				
Summer Term 2020	40	36	39	40
Autumn Term 2020	8	5	7	8
Spring Term 2020	13	21	18	18

⁴ Appendix Table 1 presents estimates of nation-specific gaps in learning loss from a regression analysis conditioning on student gender, age, and family income. The estimates show the cross-nation differences are not driven by these factors.

⁵ For the autumn term, the estimates in Figure 2 are extrapolated across the whole term. This is due to there being no policy changes in attendance throughout this term, thus making the Figure 2 estimate representative of the entire term. The estimate of learning loss for Scotland in April 2020 is assumed representative of losses for pupils in Scotland for the period stretching from March 23rd to the end of the 2019/20 school year. Once again, the policy environment in April 2020, with regard to attendance in Scotland, is representative of the attendance policy throughout the entire period.

The role of policy

The role of policy in explaining the nation specific gaps in learning loss can be further studied by asking what would have happened under counterfactual scenarios where nations had the same policies and/or learning losses. Three such counterfactuals are the following:

Counterfactual 1: fixing all school calendars to the Scottish autumn term.

First, consider a scenario where all four nations would have had the same calendar dates as Scotland. This is the most favourable condition given pupils in Scotland broke up for school holidays earlier in the summer of 2020 when the pandemic first hit, subsequently enrolling for a long autumn term, starting in August 2020. These term dates are beneficial to pupils as home learning rates are low during the onset of the pandemic and, due to the reopening of schools, much higher in the autumn term.

Fixing other nations to Scotland's autumn term school calendar would have been particularly beneficial to England and Wales: overall learning loss would have reduced from 61 days to 56 days in England, and reduced from 68 to 63 days in Wales. Learning loss in Northern Ireland would increase from 61 to 62 days, with Scotland remaining at 64 days lost. Thus, historically determined pre-set timings and lengths of school terms played a role in determining learning loss across the four nations and insulated Scottish pupils from experiencing greater relative losses.

England's pupils meanwhile benefitted from the earlier return of all pupils to schools on 8 March 2021 at the end of the second closure of schools in England, contrasted with the later returns for all pupils in other parts of the UK (see table 1).

Counterfactual 2: fixing all home learning rates during school closures so they equal England's home learning rates

A second counterfactual equalises home learning rates across the nations, fixing them to the higher learning rates in England. In this calculation, absence rates and term lengths vary across the nations, but all nations have the same home learning rates as England. It can be asked how many days would be lost had each nation had the same home learning rates as pupils in England.

Under this scenario, there are beneficial effects for Wales and Scotland: overall learning loss would reduce from 66 to 59 days in Wales and reduce from 64 to 60 days in Scotland. Learning loss in Northern Ireland stays the same at 61 days, with England remaining at 61 days lost.⁶ The fact that equalizing home learning all but eliminates cross national differences in days lost shows that lower rates of home learning in Scotland and Wales are a large contributory factor towards differential learning loss between the nations. This is perhaps unsurprising in the case of Wales – where term length and, to a lesser extent, attendance policy, closely mirror those in England. In this case, the differences in days lost between pupils in England and Wales must be driven by differences in home learning rates.

Counterfactual 3: fixing all attendance rates during school closures to equal England's attendance rates

A final counterfactual focuses on differences in absence rates over the course of each term. There are two factors that drive absence rates. The first relates to when schools closed to all but vulnerable pupils and children of key workers, during which England had higher rates of attendance. The second relates

⁶ This result is driven by the fact that our estimated learning losses in the Autumn term are lower in Northern Ireland than they are in England. This cancels out the higher rates of home learning observed amongst pupils in England in the two periods of school closure.

to the attendance of subsets of pupils in particular year groups who were allowed to return early despite school being closed to most pupils.

Under this scenario, absence rates are fixed over the closure periods for all nations at the average absence rate in England. This allows the other nations to ‘benefit’ from the early return of pupils in England in the 2020/21 spring term as well as the higher attendance rates observed at the end of the 2019/20 summer term. This has a large effect of days lost for Scotland and Northern Ireland, both of whom had high absence rates during these periods. Days lost for these nations fall from 61 to 54 (Northern Ireland) and from 64 to 59 (Scotland). In Wales, where attendance rates are similar to England, at least in the 2019/20 summer term, days lost fall from 66 to 65 days.

Thus, England benefitted from higher attendance rates during the pandemic both during normal term time and during partial school closures when vulnerable pupil and children of key workers could attend. Attendance policy played a big role in driving cross national differences.

England and Wales relaxed full closure restrictions in both the 2020 summer term and the 2021 spring term. While Northern Ireland and Scotland did allow some pupils back in the 2021 spring term, schools remained closed to almost all pupils in the 2020 summer term. This fact, coupled with particularly low rates of home learning in this period, has a strong effect on total days lost over the year for these two nations.

Overall learning loss was also impacted by rates of school attendance of vulnerable children and children of key workers during school closures. This is demonstrated in the analysis presented in Appendix Figure A2, showing how differences in learning loss estimates abate once a focus is placed only on pupils absent from school.

During the first round of school closures in 2020, five percent of pupils in England remained at school compared with only one percent in Scotland, Wales, and Northern Ireland. An earlier analysis (Sibieta and Cottell, 2020) found that more than double the proportion of schools were open in England than the rest of the UK during this period. In England, most schools remained open for vulnerable children and children of key workers, while in the rest of the UK fewer schools remained open, operating as ‘hubs’ or ‘clusters’.

The cross-national differences widened during the spring term of 2021. In England, attendance rates averaged 37 percent, compared with only 20 percent (Northern Ireland) and 25 percent (Scotland and Wales). Guidance issued by the English Government in January 2021 advised that ‘there is no limit to numbers of these pupils who may attend and schools should not limit attendance of these groups’ (Department for Education, 2021a). The third counterfactual thus demonstrates how much other nations would have benefitted from this more proactive approach. Pupils in Wales would have received three days of extra learning, with those in Scotland and Northern Ireland receiving 5 and 7 extra days of schooling respectively.

In summary, the counterfactuals therefore combine to show a role for both education policy enacted under the pandemic and historical policy differences in explaining differential degrees of learning loss across the home nations.

3. Poor-rich divides in learning loss

Several studies have documented variations in the learning losses suffered by pupils during the first period of home schooling (Andrew et al, 2020; Elliot Major, Eyles and Machin, 2021; Green, 2020). A

consistent theme is that children and young people from more affluent backgrounds – whether measured by parental income or type of schooling – received more instruction time during the first lockdown.

Table 3 revisits this question, showing how learning losses differ across the family income distribution for the three periods under study. Due to relatively small sample sizes for Northern Ireland, Scotland and Wales, their data is pooled together so that the Table contrasts England to the rest of the UK.

The Table highlights two sets of clear findings. First, there are significant divides in learning loss across the year of the pandemic. Pupils from the bottom fifth of incomes experience higher learning loss than those from the top fifth. In England, for example, during the 2021 school closures, the poorest pupils missed out on a third of their learning (34.9 percent) while the richest pupils missed out on a quarter of their learning (24.4 percent). This 10.5 percentage point gap is similar in scale to the 8.8 percentage point gap observed in the rest of the UK.

This poor-rich gap in learning loss was a little higher during the first school closures in 2020 (13.4 percentage points for England and 11.7 percentage points for the rest of the UK). During the return of schools in autumn 2020 meanwhile the poor-rich gap in learning loss is noticeably larger in England (7.5 percentage points for England and 1.6 percentage points for rest of the UK).⁷

Table 3: Inequality in Learning Loss

	April 2020		November 2020		January 2021	
	England	Rest of UK	England	Rest of UK	England	Rest of UK
	(1)	(2)	(3)	(4)	(5)	(6)
Bottom 20%	60.9	71.4	13.4	8.3	34.9	47.4
Middle 60%	56.4	62.7	11.6	9.1	27.0	38.3
Top 20%	47.5	59.7	5.9	6.7	24.4	38.6
Sample Size	2952	651	1973	402	1910	386

Notes: Quintiles of total household income as measured in Wave 10 of Understanding Society. For those missing in Wave 10, Wave 9 data are used. Quantiles are computed on the applicable sample. Weights provided in USoc are used to compute aggregates.

Looking at the 2021 school closures period, the poorest pupils in England missed out on a third of their learning (34.9 percent), while pupils in the rest of the UK missed out on nearly a half of their learning (47.4 percent). The England/rest of the UK gaps in learning loss are present for both poorer and richer pupils across all the stages of the pandemic. These gaps are significant: during the 2021 school closures, the poorest pupils in England experienced lower learning loss than the most affluent pupils in in Scotland, Wales, and Northern Ireland (34.9 percent compared with 38.6 percent respectively).

It should be noted that these estimates are taken at a point in time and therefore are not representative of losses suffered over the course of a year. At various points in time, the nations have prioritised those in exam groups and those of primary age for early return to school. This means that even within income bands, there is likely to be heterogeneity in days of schooling lost by age.

⁷ Appendix Table 2 shows results from regression analysis to document the inequalities in learning loss for England and the rest of the UK.

4. Public sentiment to education reform

In June 2021, official attendance data showed a rapid rise in the number of pupils absent because of a potential contact with Covid-19 in school, amid concerns about the spread of the Delta variant of Covid. Covid-related pupil absence in state-funded schools, adjusted for year 11-13 pupils not expected to attend, was 5.1 percent on 24 June. This was up from 3.3 percent on 17 June and 1.2 percent on 10 June (Department for Education 2021b). The latest attendance data for other nations during the week commencing the 14th June were 88 percent in Wales, 87 percent in Scotland, and 89 percent in Northern Ireland. These absences once again prompt discussion about potential policies that could address the learning loss suffered during the pandemic.

In June 2021, England's Department for Education unveiled an initial recovery plan, noticeably without a commitment to extending school time proposed by the government's education recovery commissioner (Department for Education, 2021c).⁸ The DfE also announced that schools and colleges will be funded to give some year 13 students the option to repeat their final year – but this option was not made available for other pupils.

We find significant public support for both these policies, i.e. extending the school day; and allowing pupils to repeat a whole school year. In our LSE-CEP Social Mobility Survey, we asked participants about the extent to which they agreed with the two policies under a range of scenarios where we varied the hypothetical amount of schooling time lost (as a percentage of the school year) and, in the case of extending the school day, the amount by which the day was to be extended.

Overall, just under seven in 10 (68 percent) of participants agreed with repeating the school year under the hypothetical scenarios we presented to them. Understandably, agreement rises with the scale of the hypothetical learning losses. Our estimates of learning loss suggest that pupils have lost between 30 percent and 40 percent of a normal school year since March 23rd. Further absences in June 2021 will extend this loss further.

In the hypothetical scenario – 39 percent of a school year lost - that is most similar to the actual losses we estimate, we find that 68 percent of participants agree with retaking the year. Agreement in England, Scotland, and Wales differs very little from the overall average, but significantly fewer Northern Irish participants – 58 percent - agree with this policy proposal.

Extending school days proved more contentious. A narrow majority – 53 percent - of participants believed that this would be an appropriate policy response to the learning losses. We did not detail how this extended school day would be used however. The level of agreement in this case is largely invariant to the hypothetical learning losses that we present to participants and, unlike the suggestion of a repeated school year, the level of agreement differs insignificantly across the four nations.

5. Conclusions

A combination of official attendance statistics, school calendar dates and nationally representative data, and a set of counterfactual policy experiments, are used to document and explain the unprecedented disruption to schooling that took place across the four nations of the UK between March 2020 and April 2021. Well over half of classroom days were lost for most pupils over one calendar year. Considering

⁸ This prompted Sir Kevan Collins to resign.

learning undertaken at home and in the classroom, pupils on average lost around a third of the learning they would have benefitted from if the pandemic had not happened.

There are big overall learning losses in all four nations. They raise significant concerns about scarring effects they may have in the future. Looking at nation specific gaps in learning loss that occurred, children in Scotland and Wales experienced more learning losses than those in England and Northern Ireland. Undertaking a series of counterfactual scenarios we find that these differences across the nations arise both because of variations in learning loss at home, and due to education policy differences. These relate to both historical differences in term times and from specific policy choices during the pandemic concerning school attendance.

Pupils from the poorest homes experienced higher learning loss in all four nations. But there are also differences between nations by family income levels as well. During the 2021 school closures, in particular, the poorest pupils in England experienced lower learning loss than the most affluent pupils in in Scotland, Wales, and Northern Ireland.

Rapidly rising absences in schools in June 2021 once again prompt discussion about potential policies that could address the learning loss suffered during the pandemic. Survey responses show there to be significant public support for two major policies - extending the school day; and allowing pupils to repeat a whole school year.

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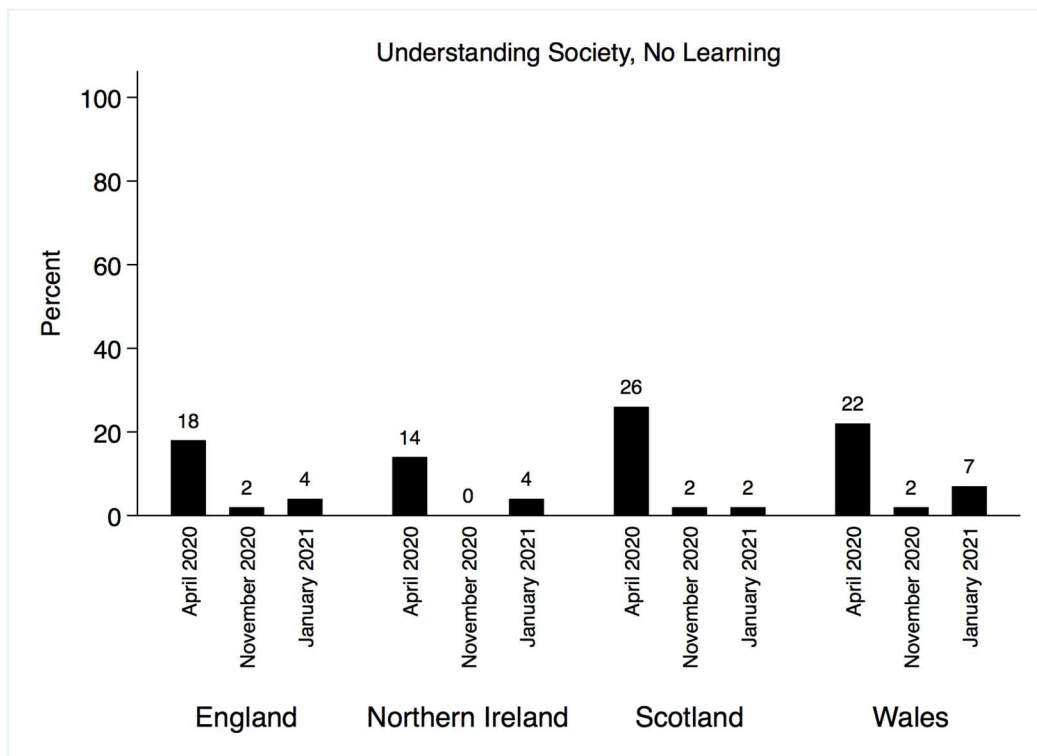
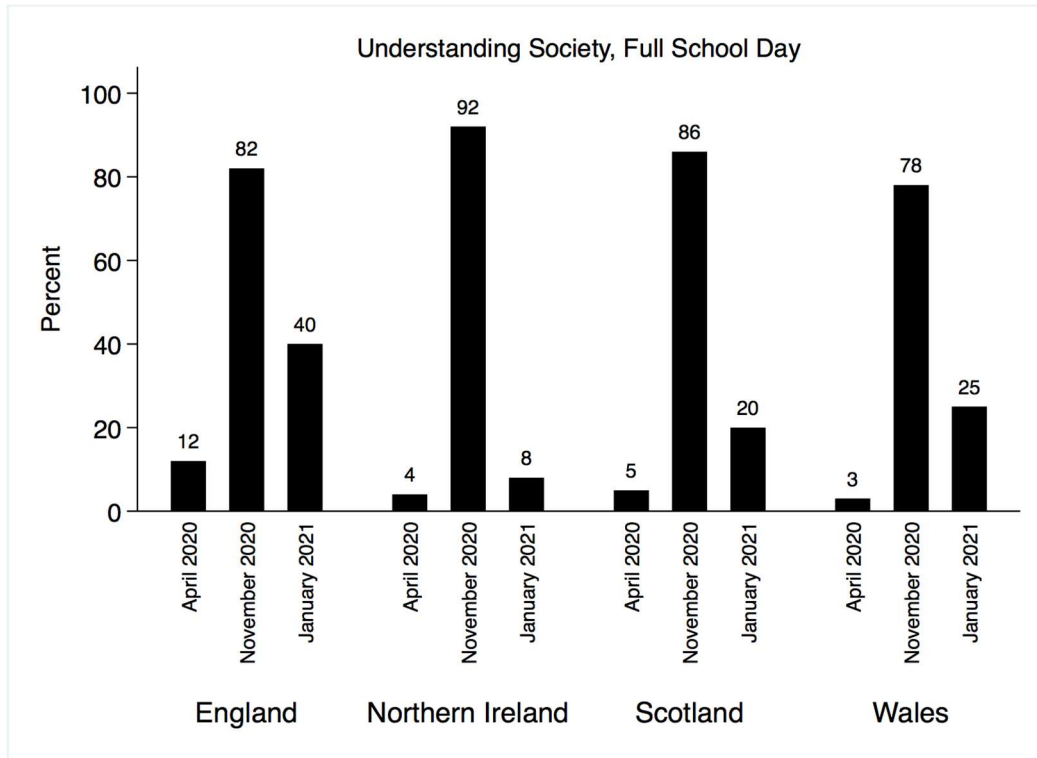
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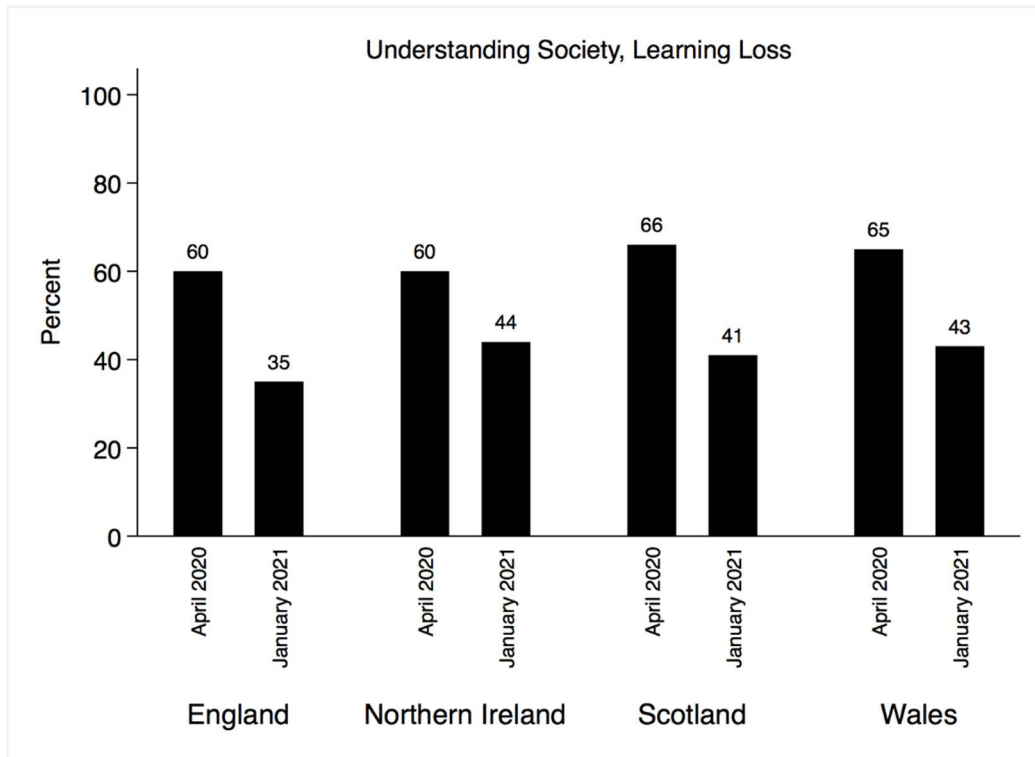
Appendix

Figure A1: Full School Day and No Schooling



Notes: See data appendix for further details on how learning losses are computed. Aggregate figures are produced using sample weights.

**Figure A2: Learning Loss,
Conditional on not attending school**



Notes: This figure highlights learning losses during the two periods of school closure for those not attending school. These estimates are used in our calculations of total days of lost schooling for the four nations Attendance in April 2020/January 2021 is 4.9%/18.7% in England, 1.1%/2.3% in Northern Ireland, 1%/6.1% in Scotland and 1%/ 3.3% in Wales. As with previous figures, these estimates are constructed using UKHLS sample weights.

Table A1: Learning Loss Regressions

	April 2020	November 2020	January 2021
	(1)	(2)	(3)
Northern Ireland	0.016 (0.032)	-0.051 (0.038)	0.124 (0.035)
Scotland	0.086 (0.024)	-0.033 (0.023)	0.100 (0.032)
Wales	0.091 (0.025)	0.011 (0.028)	0.124 (0.048)
Primary	0.059 (0.017)	-0.053 (0.016)	0.091 (0.019)
Female	-0.035 (0.017)	-0.005 (0.016)	-0.018 (0.019)
Bottom 20%	0.042 (0.025)	0.018 (0.025)	0.070 (0.026)
Top 20%	-0.094 (0.020)	-0.052 (0.015)	-0.027 (0.027)
Observations	3,391	2,329	2,258

Notes: Robust standard errors in parentheses. Earnings refers to total household income as measures in Wave 10 of Understanding Society. For those missing in Wave 10, Wave 9 data are used. Quantiles are computed based on the full (household) sample. When wave 10 data are missing, the parental household income quantile from wave 9 is used to construct earnings quintiles. Discrepancies between the sample sizes in Appendix table A1 and table 2 are due to missing information on gender and stage of schooling.

Table A2: Learning Loss Regressions, England and Rest of UK

	April 2020		November 2020		January 2021	
	England	Rest of UK	England	Rest of UK	England	Rest of UK
	(1)	(2)	(3)	(4)	(5)	(6)
Primary	0.065 (0.020)	0.017 (0.028)	-0.047 (0.018)	-0.088 (0.030)	0.093 (0.021)	0.083 (0.044)
Female	-0.028 (0.020)	-0.068 (0.028)	-0.010 (0.018)	0.024 (0.030)	-0.018 (0.021)	-0.020 (0.041)
Bottom 20%	0.039 (0.028)	0.060 (0.037)	0.021 (0.029)	-0.004 (0.039)	0.068 (0.029)	0.079 (0.057)
Top 20%	-0.103 (0.021)	-0.015 (0.055)	-0.056 (0.016)	-0.026 (0.037)	-0.029 (0.029)	-0.007 (0.059)
Sample Size	2,781	610	1,941	388	1,881	377

Notes: Robust standard errors in parentheses. Earnings refers to total household income as measures in Wave 10 of Understanding Society. For those missing in Wave 10, Wave 9 data are used. Quantiles are computed based on the full (household) sample. When wave 10 data are missing, the parental household income quantile from wave 9 is used to construct earnings quintiles. Discrepancies between the sample sizes in Appendix table A2 and table 2 are due to missing information on gender and stage of schooling.

Data Description

Attendance Data

We use data collected separately by each of the four nations to construct absence rates that are used to estimate total days missed. These data are plotted in Figure 1. Although most of the gaps in the data are caused by either holidays in between terms or half term, there are instances of missing data. As schools often start and end terms midweek, data from these partial weeks are often missing. Data from the first week of the Spring and Autumn terms of 2020/21 are missing for England as is data from the week commencing the 19th October (which precedes the half term beginning in the following week). Similarly, we are missing data from Wales for the first partial week of the 2020/21 Autumn term. Data for Northern Ireland is collected in full, but again there are no figures for the week commencing the 19th October. Unlike England, where this data is missing, the lack of data here is due to schools being closed as Northern Ireland extended the October half term by a week to stem the spread of Covid.

Along with the above there are two adjustments that we make to the raw data. For Scotland, we have been unable to find attendance data predating the 2020/21 school year. In this case, we use April attendance estimates from USoc and extrapolate for the period spanning 23rd March 2020 to 26th June 2020. We feel confident in doing so as attendance in April 2020 is likely to be representative for pupils in Scotland throughout the entire period as attendance policy in April 2020 mirrored the policies in place in the months preceding and leading up to the 2019/20 Autumn term. By way of comparison, Northern Ireland also had no policy changes between 23rd March 2020 and the end of the 2019/20 school year and had largely unchanged attendance over the entire period. As noted in the notes to Figure 1, we also make a minor adjustment to the Welsh data. Data for the week commencing 2nd November exclude those in years 9 and above. These pupils were absent from school during this week to prevent overcrowding. To allow for this in the attendance figures we down weight the estimate by multiplying through by the fraction of pupils in years 8 and below.

Learning Losses and Days Lost

We compute learning losses in order to move beyond school absence as a measure of learning, or lack of it. Dedicated Covid waves, taken from Understanding Society (USoc), collect information on home schooling at three crucial points in time; April 2020, which corresponds to the start of the first closure period; November 2020, the mid-point of the Autumn term; and January 2021, the onset of the second period of school closures.

During these periods, national policies on closures were aligned. All schools were open in November 2020, while only vulnerable children and those of key workers were able to attend school in April 2020 and January 2021. For the latter two periods, we use a simple conversion to relate the measurement collected in USoc to learning losses – the percentage of normal school time lost. Those attending school are treated as having 100% of a normal school day (no learning loss). Those not attending are asked the amount of hours spent on schoolwork during the average day. The answers are coded as follows: less than an hour, 1-2 hours, 2-3 hours, 3-4 hours, 4-5 hours, and 5 or more hours. Under the assumption that a school day corresponds to 6 hours, with an hour break, we convert these answers to fractions of a school day in 20% intervals i.e. less than an hour is 0%, 1-2 hours is 20%, up to 5+ hours which is 100% of a school day.

The November release asks about both school attendance and home schooling. We combine both measures together. Parents are asked how many days their children attended school and for how many hours in the previous week. We convert these into a total number of hours over the week, topcode at 30 (the maximum assumed ‘normal’ number of hours), and divide by 30 to get a fractional measure of school attendance. We then use the home schooling questions to get a separate fractional measure of schooling (as detailed above) and sum then two. For those whose schooling exceeds 100% of normal time, we topcode at 1 (or bottom code learning loss at 0%).

Converting these measures into days of schooling lost since March 23rd (when school closures began) is more difficult. Each of the four nations have slightly different term lengths and adopted various different policies regarding school attendance (as documented in the main text). Despite this, many children attended school normally during the Autumn term, and, aside from vulnerable children and children of key workers, did not attend in the Summer and Spring terms. The major exception to this is students in England who returned to school on March 15th (prior to the end of the 2020/21 Spring term).

We convert attendance data and learning loss estimates into a measure of days lost by multiplying through the (average) absence rate over the course of each term with the learning loss estimate (that excludes those attending school) and then multiplying this through by the term length. We do this for the affected portion of the 2019/20 Spring term (using the April 2020 learning loss estimate), the entirety of the 2019/20 Summer term (using the April 2020 learning loss estimate), and the Spring term of 2020/21 (using the January 2021 learning loss estimate). For the Autumn term of 2020/21, we simply use the estimate of learning loss from November 2020 and multiply this through by the term length. In this case, we use the learning loss estimate that is inclusive of school attendance. The reason for using a different methodology for this term is that most children are attending school in this period and learning loss estimates for those not in school are therefore based on very small sample sizes once the data is split by nation.

The term lengths used in our analysis as given in Table A3.

Table A3: Term Lengths and Covid Disruption

	England	Scotland	Wales	Northern Ireland
Summer Term 2019/20 (Schools mainly closed)	61 days (+ 10 days of spring term 2020)	49 days (+ 10 days of spring term 2020)	59 days (+ 10 days of spring term 2020)	50 days (+ 10 days of spring term 2020)
Autumn Term 2020/21 (School Open)	73 days	88 days	73 days	77 days
Spring Term 2020/21 (Schools mainly closed)	58 days	60 days	55 days	59 days

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