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Inequalities in late adolescents' educational experiences and wellbeing during the Covid-19 pandemic

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ABSTRACT

While the health risks of Covid-19 for young people are low, they have borne a heavy cost of the pandemic through intense disruption to their education and social lives. These effects have not been experienced equally across social and demographic groups. Using data from a nationally representative survey of 4,000 young people in England linked to their education records, we study inequalities in late adolescents' experiences of the Covid-19 pandemic. We find particularly stark inequalities by socio-economic status, with those from poorer families facing disadvantage on multiple fronts, particularly in their experiences of home learning, returning to school, and exam cancellations compared to their more advantaged peers. Gender and ethnic inequalities were more mixed, though young females reported significantly lower wellbeing scores than males. This evidence suggests that the pandemic has exacerbated existing inequalities, meaning policy-makers concerned with increasing equity and social mobility now face an even bigger task than before.

KEYWORDS

Covid-19; socio-economic status; gender; ethnicity; wellbeing; inequality

1. Introduction

Young people have arguably been asked to bear a disproportionate cost of the Covid-19 pandemic. While they are at very low risk of negative health outcomes and mortality from Covid-19, they have experienced unprecedented disruption to their lives, including two periods of full school closure, multiple self-isolation periods due to 'bubble closures', exam cancellations, online learning, and uncertainty over future labour market prospects. Theories of human capital (Becker, 1975) suggest that education has a direct effect on individual productivity, and in turn future employment prospects and earnings, implying that learning losses are likely to have a detrimental effect on the future earnings of those experiencing these kinds of disruption. Moreover, existing research shows inequalities in educational experiences and achievement are drivers of later life outcomes (Blanden et al., 2007; Jerrim & Macmillan, 2015). Inequalities in experiences during the pandemic may therefore have lasting effects on the life chances of these young people and worrying implications for social mobility.

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Using survey data from a new probability sample of nearly 4,000 adolescents (aged 11–18), we study inequalities in this group's experiences of the Covid-19 pandemic. We focus on the educational experiences of young people in England during and after the first lockdown including their experience of home schooling, returning to school and exam cancellations. We also examine their mental health, wellbeing and future work and education plans through the lens of disparities by socio-economic status, gender, and ethnicity. In doing so, we contribute to a small number of studies which have begun to highlight inequalities in young people's experiences of education, and mental health and wellbeing. These studies reveal stark differences in home learning experiences by family income (Andrew et al., 2020), higher learning loss for those from lower socio-economic backgrounds (Engzell et al., 2021), and larger impacts on mental health and wellbeing for women (Banks & Xu, 2020). However, much of this research was carried out during initial disruption to schooling in spring/summer 2020 and focussed mainly on educational impacts. Our study advances understanding of the pandemic's effects on young people by studying a broader range of outcomes and by examining experiences in a later stage of the pandemic (data collection November 2020–January 2021). This allows us to examine inequalities in efforts to 'catch up' from learning losses, approaches to assessment and awarding of qualifications, and impacts on future plans. A strength of our analysis is that we link the survey data to administrative records from the National Pupil Database (NPD), enabling us to control for prior educational attainment, as well as free school meals (FSM) status. This means we are comparing outcomes across groups with similar observable characteristics, particularly in terms of educational attainment.

Our findings reveal wide inequalities in the experiences of young people during the Covid-19 pandemic across socio-economic status (SES), gender, and ethnicity. Outcome gradients by SES were particularly notable, with young people from poorer families facing disadvantages on multiple fronts throughout the pandemic in comparison to those from more advantaged families. Disadvantaged young people were more likely to be adversely affected in their lockdown experiences, their returning to school, their mental health and wellbeing, future plans, and their experiences of exam cancellations. They studied for fewer days per week and hours per day during school closures, had less support at home, and felt more held back by school closures. They were less likely to have private tuition, although they received more in-school tuition in the form of extra classes, one-to-one sessions, or small group tuition. They reported lower wellbeing and higher levels of anxiety about the future. They also reported being more likely to take any job after university that came along. Finally, they were negatively impacted by the government's decision to replace algorithmically-generated calculated grades with Centre Assessed Grades (CAGs), all of which was put in place due to the cancellation of exams in 2020: those without graduate parents were significantly less likely to see their grades improve when the algorithm was abandoned in favour of Centre Assessed Grades (CAGs).

Inequalities were also evident by gender and by ethnicity, though less consistently across outcome domains. The key difference between male and female experiences related to mental health and wellbeing, with young females reporting lower wellbeing and stronger feelings of loneliness, a lack of motivation, and anxiety about the future. While previous studies have shown that young females typically have lower wellbeing

than males, these differences appear to have been exacerbated by the pandemic (Newlove-Delgado et al., 2021).

Differences across ethnic groups are more mixed. We find little evidence of discrepancies in time spent studying at home during the school closures. While young people from Asian backgrounds received less help from their parents relative to White young people, they were more likely to receive help from a paid tutor during the first lockdown. This difference was also apparent on returning to school from September – while ethnic minority groups received similar levels of in-school additional support, young people from Black and Asian families were more likely to receive help from a paid tutor outside of school. Black and Asian young people were also more likely to report being more likely to go to university as a result of the pandemic, relative to White young people.

The remainder of the paper proceeds as follows. In the next section we review the literature on differences in young people's experiences of the pandemic to which we contribute. [Section 3](#) describes our new survey data in more detail and the methods used here to analyse inequalities in young people's experiences. [Section 4](#) reports the results from our analysis, while [Section 5](#) ends with some brief discussion and conclusions.

2. Related literature

This paper contributes to a small but growing body of research that has explored variation in young people's experiences of the pandemic. Andrew et al. (2020) use parent responses to young people's experiences, rather than direct reporting from young people themselves, and focus on an early stage in the Covid-19 pandemic when many families were adjusting to providing home learning. Their findings highlight substantial variation in the amount of time that young people spent learning during this period, as well as differences in the activities undertaken and the resources available. They also show that these differences are correlated with family income, implying that this period of disruption will likely exacerbate pre-existing socio-economic inequalities in pupil attainment. Similar findings, also for England, are highlighted by Green (2020).

Evidence of inequalities arising during the Covid-19 pandemic has also emerged in other contexts, for example in Denmark, the identification of a socio-economic gradient in library usage as a proxy for learning opportunities is explored by Jæger and Blaabæk (2020); while reading behaviour during the pandemic is studied by Reimer et al. (2021). Other studies focus on home schooling efforts in Germany (Dietrich et al., 2021; Woessmann et al., 2020), on time spent learning in Switzerland (Grätz & Lipps, 2021), and on use of a mathematics online platform in the US (Chetty et al., 2020). These studies form a broad picture of the effects of the Covid-19 pandemic exacerbating existing inequalities across socio-economic status, gender and ethnicity, among other dimensions (Blundell et al., 2020).

Other studies have looked further downstream at the impact of the disruption on young people's educational attainment. Kuhfeld et al. (2020) use previous findings on learning loss from absenteeism and summer learning loss to project substantial learning losses among those restarting school in September 2020 (i.e. even ignoring subsequent disruption), and highlighting the potential for this to lead to substantially increased variation in pupil attainment. Engzell et al. (2021) use data on standardised test outcomes to estimate the effect of school closures in the Netherlands, finding two to three months'

learning loss, which, given the relatively short closures in the Netherlands, implies almost no learning gain during this period. Furthermore, they highlight up to 60% larger losses among those with less educated parents, likely due to the kind of unequal experiences of home learning highlighted by earlier studies. Similar findings have emerged in other contexts (Maldonado & Witte, 2020), including in England, where Rose et al. (2021) find learning losses equivalent to about two months' progress in Year 2 (age 6–7) pupils' attainment in reading and mathematics and a widening in differences associated with disadvantage. The evidence on learning loss is reviewed by Hanushek and Woessmann (2020) as part of their assessment of the future economic impacts of these learning losses.

Evidence is also mounting of the mental health and wellbeing effects of the pandemic (Creswell et al., 2021), although there is less evidence on children and young people (Newlove-Delgado et al., 2021). In the UK, Banks and Xu (2020) find evidence of a pandemic-induced decline in mental health. They find these negative mental health effects to be particularly pronounced among young adults and women, highlighting the importance of understanding whether this extends to children and young people, and the potential for gender inequality in these impacts. These patterns are corroborated by Henderson et al. (2020) using data from four generations of national longitudinal studies and Newlove-Delgado et al. (2021) using data from a follow up to England's national Mental Health of Children and Young People survey.

In summary, there is growing evidence of large and unequal impacts of Covid-19 disruption on young people's lives and educational experiences. However, much of this work has focussed explicitly on effects on young people's academic attainment, and part of our contribution is to widen that focus by considering non-educational outcomes. In addition, we consider educational experiences beyond the initial school closures (April–June 2020), which has been the focus of much of the work reviewed here, including experiences of disrupted in-person schooling covering much of our fieldwork period (November–December 2020). This includes understanding the potential for inequality in efforts to 'catch up' from learning loss, which we might expect to follow from the initial inequality from the disruption as highlighted above, and interaction with wider aspects of educational institutions based on previously documented inequalities such as the approach to assessment (Anders et al., 2020; Murphy & Wyness, 2020) as well as education and employment aspirations (Anders, 2017; Elliot Major et al., 2020).

3. Data and methods

3.1. Data

The data for this study come from the UCL CEPEO – LSE Covid-19 survey of young people, a recontact survey of those who participated in the 2019 Wellcome Trust Science Education Tracker (SET 2019) (Wellcome Trust, 2021), in collaboration with Kantar Public. This work was approved by the UCL Institute of Education Research Ethics Committee as REC1407. The 2019 SET survey was a stratified (non-clustered) random sample of 6,409 young people in school years 7 to 13 (aged 11–18) attending state-funded education in England drawn at random from a combination of the National Pupil Database (NPD) and the Individualised Learner Record (ILR). The response rate for the 2019 survey was 49%. All young people who participated in SET 2019 and who consented

to recontact (93%) were sent a letter inviting them to take part in the recontact survey, with a £10 monetary incentive in the form of a voucher offered, conditional on completion of the questionnaire. All questionnaires were completed online with the script adapted for completion on PCs, laptops, tablets, and smart phones. Informed consent was collected through active choice to continue with the survey after being presented with the project's information sheet and data privacy notice.

In total, 4,255 respondents completed the survey between 30 November 2020 and 17 January 2021, representing a response rate of 71% based on all those invited to take part and 66% of all SET 2019 respondents.¹ To contextualise when participants were making their responses, we include a timeline of COVID restrictions during the period of fieldwork in [Figure 1](#).

The survey data were linked to National Pupil Database (NPD) records at the individual level for the 89% of respondents who actively consented to linkage during the survey. For analyses which use the linked NPD data, the sample size is 3,769. All estimates are weighted to account for nonresponse to SET 2019 and for attrition between SET 2019 and the 2020 recontact survey. Further details about the survey design and fieldwork outcomes can be found in the survey technical report, alongside the data at UK Data Service.

3.2. Measures

With the exception of linked administrative data on pupil attainment and free school meals eligibility, all data are based on retrospective self-reporting by participants. Full details of questions to which the participants were responding are reported in the study's technical documentation (Macmillan et al., 2021).

We use two measures of socio-economic status, one on whether at least one of the young person's parents is a university graduate (self-reported by respondents), and an indicator of eligibility for free school meals (FSM) over the past six years from the administrative data linkage. The combination of both measures allows us to observe the most disadvantaged compared to the rest (just over 25% of our sample were eligible for FSM over the last six years), and also the education levels of the parents, capturing more diffuse, non-economic inputs to the young people's education relating to networks and social and cultural capital.

To measure young people's wellbeing we use the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS), which is summed across seven items and converted to a total score.² This scale is then standardised to mean zero, standard deviation 1 across all respondents with a mean value for our final sample slightly above zero, suggesting a very small positive selection for those responding. We also report answers to questions on feeling unmotivated (73%), lonely (44%), and anxious (51%), which had a negative impact on wellbeing.

3.3. Basic descriptive statistics

We estimate socioeconomic, gender, and ethnic differences across a range of outcomes relating to educational experiences in and out of school during the first lockdown and on returning to school, as well as differences in wellbeing, and future plans. [Table 1](#)



Figure 1. COVID restrictions and fieldwork timeline.

Table 1. Descriptive statistics from the UCL CEPEO / LSE survey data by key demographic characteristics.

	N	Total	Graduate Parent	Non-graduate parent	Eligible for FSM over past 6 years	Not eligible for FSM over past 6 years	Male	Female	Black, Asian or Minority Ethnic (BAME)	White
Total proportions			45.5	54.5	25.3	74.7	50.7	49.3	24.2	75.8
Number of days studied (per week)	3,170	3.13	3.40	2.95	2.86	3.22	3.04	3.22	3.21	3.11
Number of hours studies (per day)	2,922	2.89	3.10	2.75	2.64	2.97	2.85	2.93	2.84	2.91
Whether received help at home with studying	2,386	55%	59%	51%	50%	56%	55%	55%	47%	58%
Whether received help from a paid tutor	2,402	8%	8%	7%	9%	7%	9%	6%	14%	6%
Number of days of school missed (since Sept 2020)	1,587	9.24	9.15	9.22	9.93	9.01	9.44	9.06	9.94	9.01
Feels held back 'a lot' by school closures	2,706	31%	30%	31%	38%	28%	29%	33%	35%	29%
Whether received some form of extra in-school tuition or class (since Sept 2020)	2,032	15%	15%	14%	18%	14%	14%	15%	15%	15%
Whether received help from a paid tutor (outside school since Sept 2020)	2,707	9%	12%	8%	8%	9%	9%	9%	16%	7%
Standardised wellbeing score	3,536	0.03	0.09	-0.05	-0.05	0.05	0.23	-0.18	-0.01	0.04
Feeling unmotivated has had a negative impact on wellbeing	3,794	73%	73%	73%	71%	73%	65%	80%	71%	73%
Feeling lonely has had a negative impact on wellbeing	3,794	44%	45%	44%	43%	44%	34%	54%	40%	45%
Feeling anxious about the future has had a negative impact on wellbeing	3,794	51%	53%	51%	50%	51%	39%	63%	50%	51%
More likely to go to university after A levels as a result of the pandemic	1,417	15%	15%	16%	21%	13%	14%	16%	28%	10%
More likely to go on to study apprenticeship after A levels as a result of the pandemic	1,181	24%	19%	25%	28%	22%	30%	17%	24%	23%
More likely to take any job after university as a result of the pandemic	465	47%	40%	53%	48%	46%	40%	51%	48%	46%
More likely to study a post-graduate qual. after university as a result of the pandemic	420	15%	14%	17%	15%	15%	13%	16%	11%	16%
Received higher Centre Assessed Grades (CAGs) than Calculate Grades	300	59%	67%	52%	60%	58%	56%	61%	68%	56%
Would have preferred to take exams in 2020	770	57%	60%	53%	62%	55%	54%	59%	63%	55%
Felt that CAGs were better than had expected	960	20%	17%	22%	20%	20%	17%	23%	17%	22%

Notes: All figures from the UCL CEPEO – LSE Covid-19 survey of young people linked to the National Pupil Database. Some questions were asked only to specific year groups where relevant. Samples are restricted to those who report given outcome.

documents summary statistics for our outcomes of interest across five areas: lockdown experiences; returning to school; wellbeing; future plans; and exam assessment experiences.

For lockdown experiences, we observe retrospectively self-reported days studied per week (3.1 on average) and hours studied per day (2.9 on average) during the first period of school closures from March 2020, as well as the proportion who report receiving help at home with studying (55%) and receiving help in the form of a paid tutor (8%). The reported hours of study per day are lower than the 'total learning' hours reported in Andrew et al. (2020) but in line with the 'online classes' hours reported in that study. Both studies use retrospective reports, but these differences could be driven either by young people's interpretation of 'hours studied' or from the fact that parents are responding on behalf of young people in the Andrew et al. study, while we use direct reports from young people.

Figures 2 and 3 break down the reported days and hours studied by graduate parent status. Young people with graduate parents reported studying more days on average (37% reporting studying five days a week compared to 31% with no graduate parents) and more hours per day (41% reporting studying five or more hours a day compared to 33% with no graduate parent).

Returning to school experiences show the average number of days missed during the disrupted period of education from September to December 2020 was 9.2 and 31% of young people felt held back by closures upon returning to school. We also find 15% of young people received additional in-school help in the form of extra tuition or classes, and 9% received additional help outside of school from a paid tutor.

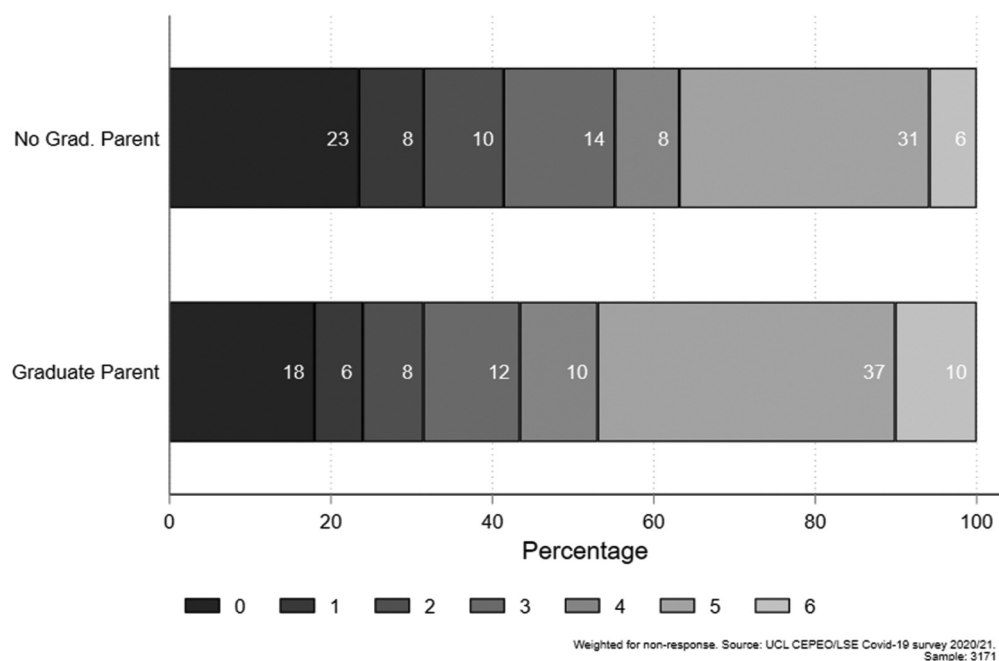


Figure 2. Number of days studied per week during lockdown 1 (March–June 2020) by parents' graduate status.

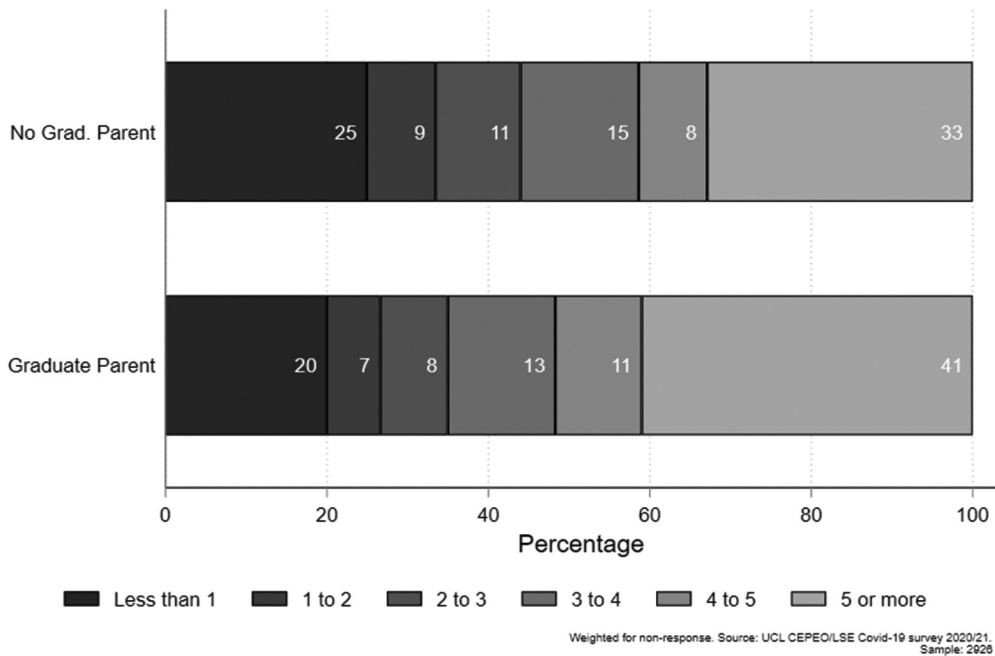


Figure 3. Number of hours studied per day during lockdown 1 (March–June 2020) by parents' graduate status.

Measures of future plans asked about how young people's plans had changed in response to the pandemic. In particular, whether they were more likely to go to university (15%) or to study an apprenticeship (24%) (for those studying A-levels), or were more likely to take any job going (47%) or study a post-graduate qualification (15%) (for those studying at university) as a result of the pandemic. Note that these are subjective assessments of respondents and may not accurately reflect the true probabilities of the impact of the pandemic on these future plans.

Finally, there is a group of students who experienced exam cancellations in 2020, including those in year 11 who experienced GCSE³ cancellations, and those in year 13 who experienced A level cancellations. This group of A level students were affected by the indecision over A level grade assignment, first receiving Calculated Grades from the Ofqual algorithm, before receiving Centre Assessed Grades (CAGs) assigned by teachers. We asked these young people whether they received higher CAGs than calculated grades (59% said yes) and whether both exam year groups would have preferred to take exams (57% agreed), and whether they felt that CAGs were better than they had expected (20% said yes).

Just over half of our sample had no parent with a degree compared to just under half with at least one university-educated parent. Our sample is split evenly by self-reported gender. Respondents self-identified their ethnic group and these were coded to the following five categories: White (76%), Black (5%), Asian (11%), Mixed (5%), and Other (3%). This involves combining some rather heterogeneous groups in the non-white categories but sample sizes are too small for analysis to be conducted at a more differentiated level.

Table 1 shows that there were meaningful differences in our key outcomes across SES, gender, and ethnicity. For example, those with graduate parents or not eligible for FSM were more likely to have studied more during lockdown, to have received more home help, and to have had their future plans disrupted by the pandemic. Girls were more likely to report lower wellbeing scores and say that they feel more lonely, anxious, and unmotivated during the pandemic, which had a negative impact on their wellbeing. Minority ethnic groups reported missing more school from September 2020, feeling more held back by school closures, and receiving more private tutoring during lockdown and when they returned to school, although they received less home help with studying.

3.4. Regression modelling

To ensure that we are comparing individuals with similar observable characteristics, we control for a range of measures including year group, prior attainment in the past two national Key Stage tests,⁴ Special Educational Needs (SEN) status, and whether the young person speaks English as an Additional Language (EAL).

Specifically, we estimate coefficients from regression models of the following form:

$$O_i = \alpha + \beta.SES_i + \sigma.G_i + \theta.Eth_i + \tau.Prior_i + \rho.D_i + \varepsilon_i \quad (1)$$

Where O_i is the outcome for individual i , SES is the graduate parent and free school meal status of the young person, G is the gender, Eth is the ethnic group, $Prior$ represents the past two Key Stage test results for that individual, and D includes the EAL and SEN status of the young person. β , σ , θ , τ , and ρ are the corresponding regression coefficients, from an OLS regression when the outcome is continuous. Where the outcome is binary, we estimate probit models and report average marginal effects. While our models control for a range of demographic characteristics and prior attainment,⁵ there may be unobserved variables that are correlated with our predictors and which causally affect the outcomes. This limits our ability to interpret these associations as causal effects without invoking strong assumptions.

Missing data are handled differently for outcome measures and explanatory variables. For outcome measures, we restrict our analysis to the relevant complete case sample responding to this question. For explanatory variables, missing data (which is very low given the administrative nature of the covariates) are imputed to the mean value and a missing dummy variable included in the model. As a robustness check, we also fitted the models using complete case analysis, assuming the data are missing at random (MAR) conditional on the covariates. This does not materially alter the estimates.

4. Results

4.1. Socio-economic differences in experiences

In this section, we focus on inequalities in experiences of young people from different family backgrounds, particularly between those with graduate and non-graduate parents, and those eligible for free school meals (FSM) compared to those who are not.

We first turn our attention to the educational experiences of young people from these different backgrounds during the first lockdown, when schools were closed for the vast

majority of children. Reporting by the House of Commons Public Accounts Committee (House of Commons Committee of Public Accounts, 2021) revealed that the Department for Education (DfE) had no plans in place for dealing with a disruption of this kind, and in particular, 'set no standards for in-school or remote learning during the rest of the 2019/20 school year'. Thus, young people's learning experiences were dependent on the time their parents were able to devote to home schooling as well as their ability to do so, the extent to which their school provided remote lessons, and the IT resources available in the home.

Table 2 confirms differences in young people's schooling experiences during the first lockdown. The first two columns show the number of days and hours spent on school work. Young people with graduate parents reported working 0.20 more days per week than those from families without graduate parents, and 0.11 hours more per day (though the latter is not a statistically significant difference). Similarly, those from FSM backgrounds reported working 0.29 fewer days per week, and 0.23 fewer hours per day than

Table 2. Socio-economic, ethnic, and gender gaps in lockdown 1 experiences.

	Number of days studied (per week)	Number of hours studies (per day)	Whether received help at home with studying	Whether received help from a paid tutor
Graduate parent	0.196 (0.08)**	0.119 (0.08)	0.093 (0.02)***	0.013 (0.01)
FSM in past 6 years	-0.292 (0.10)***	-0.273 (0.10)***	-0.053 (0.03)**	-0.003 (0.02)
Male	-0.178 (0.07)**	-0.092 (0.07)	-0.022 (0.02)	0.021 (0.01)*
Black	0.339 (0.16)**	0.231 (0.16)	-0.075 (0.05)	0.065 (0.03)**
Asian (incl Chinese)	0.127 (0.14)	-0.076 (0.14)	-0.082 (0.04)**	0.135 (0.03)***
Mixed	0.051 (0.16)	-0.053 (0.16)	-0.051 (0.05)	0.088 (0.04)**
Other	0.061 (0.26)	-0.174 (0.27)	-0.098 (0.07)	0.066 (0.04)
Year 10	-0.227 (0.12)*	-0.305 (0.12)**	-0.080 (0.03)***	0.003 (0.02)
Year 11	-0.210 (0.12)*	-0.247 (0.13)*	-0.224 (0.03)***	0.077 (0.02)***
Year 12	-2.369 (0.12)***	-2.280 (0.12)***	-0.333 (0.04)***	0.020 (0.02)
Year 13	-0.753 (0.12)***	-0.876 (0.12)***	-0.419 (0.03)***	-0.012 (0.02)
Year 14	-1.875 (0.13)***	-1.907 (0.13)***	-0.459 (0.04)***	-0.014 (0.02)
Prior achievement	X	X	X	X
Demographics	X	X	X	X
Observations	3,170	2,922	2,386	2,402

Notes: All analysis from the UCL CEPEO – LSE Covid-19 survey of young people linked to the National Pupil Database. Prior achievement includes total Key Stage 4 points score and total Key Stage 2 score for those in year 12-15, and total Key Stage 2 score and Key Stage 1 level for those in year 9-11. All scores have been standardised to mean 0, standard deviation 1. Demographics include Special Educational Needs (SEN) status and English as an Additional Language (EAL) from the linked National Pupil Database. Some questions were asked only to specific year groups where relevant – those who were affected by school closures in this case. Samples are restricted to those who report given outcome. Missing data is imputed to mean values for explanatory variables with a missing dummy included. Standard errors in parentheses. * sig at 10%, ** sig at 5%, ***sig at 1%.

those from non-FSM backgrounds. Given that the majority of pupils did not return to school until September, and combining across full days lost (about 3.5 days) and hours lost on days they did work (about 13 hours or about 2.5 days) this amounts to approximately 6 fewer days schooling for those from FSM backgrounds. These estimates correspond with those by Andrew et al. (2020) whose analysis of the first lockdown showed that children from better-off families spent 30% more time on home learning than those from poorer families.

While we cannot comment on the quality of the work that took place in the home, our survey contained questions on the amount of parental help given to young people. Again, we see substantial differences in the parental support on offer – those with graduate parents were far more likely to receive help with their schoolwork. And likewise, those from FSM backgrounds were much less likely to receive such help. This may of course reflect a combination of many factors, not all of them positive, such as the time parents had available, the extent to which parents value education, the confidence parents have in their ability to home school (Outhwaite, 2020), but also perceived need for this assistance.

While we might expect to see those from better-off backgrounds being more likely to pay for private tutoring for their child, we do not observe any differences in paid-for tutoring by family socio-economic status. This may reflect the fact that students from better-off backgrounds had better access to remote lessons and their parents felt more confident in home schooling.

Table 3 explores young peoples' experiences of returning to school. The vast majority returned in September 2020, but conditions were far from normal. To minimise further disruption caused by outbreaks of coronavirus, pupils were grouped into 'bubbles'; if anyone in the bubble (including the class teacher) tested positive for Covid-19, everyone in the bubble was required to self-isolate at home. Table 3 reveals little difference in how pupils from more and less advantaged backgrounds were affected by this system, with no significant differences in days missed after the return to school, by family background.

However, the experiences in returning to school were unevenly distributed in other ways. As described in the previous section, pupils were returning to school at different levels, given the variation in their home schooling experiences over such a long period of absence. Indeed, we can see from Table 3 that FSM pupils were more likely to report feeling 'held back a lot' by the school closures. Bearing in mind that our models include controls for prior attainment, this suggests that even among those young people who were at similar attainment levels pre-pandemic, FSM pupils were more likely to have fallen behind. Further exacerbating this effect, Table 3 also shows that FSM eligible young people were less likely to receive help from a tutor outside of school after their return (while those with graduate parents were more likely to do so). However, more encouragingly, FSM eligible young people did report being more likely to have received some form of extra in-school tuition or class – suggesting interventions were made by schools to help these pupils catch up, perhaps based on targeted support from national interventions such as the National Tutoring Programme.

As well as experiencing learning loss during the pandemic, many young people also saw their wellbeing suffer. In Table 4 we explore this, showing differences in pupils' overall wellbeing, motivation, loneliness, and anxiety about the future. Overall, socio-economic differences in wellbeing during the first year of the pandemic were mixed. Those with graduate parents reported slightly higher wellbeing. On the other hand, those with

Table 3. Socio-economic, ethnic, and gender gaps in returning to school experiences.

	Number of days of school missed (since Sept 2020)	Feels held back 'a lot' by school closures	Whether received some form of extra in-school tuition or class (since Sept 2020)	Whether received help from a paid tutor (outside school since Sept 2020)
Graduate parent	-0.086 (0.41)	0.008 (0.02)	0.010 (0.02)	0.031 (0.01)**
FSM in past 6 years	0.556 (0.49)	0.071 (0.02)***	0.042 (0.02)**	-0.025 (0.02)*
Male	0.344 (0.38)	-0.051 (0.02)***	-0.008 (0.02)	-0.001 (0.01)
Black	1.201 (0.94)	0.041 (0.04)	-0.023 (0.03)	0.101 (0.04)***
Asian (incl Chinese)	0.262 (0.70)	0.060 (0.04)*	-0.003 (0.03)	0.106 (0.03)***
Mixed	-0.338 (0.90)	-0.010 (0.04)	0.048 (0.04)	0.031 (0.03)
Other	0.836 (1.12)	0.094 (0.06)	0.006 (0.05)	0.068 (0.04)*
Year 10	1.086 (0.61)*	0.070 (0.03)**	0.044 (0.02)**	-0.002 (0.02)
Year 11	1.591 (0.62)**	0.241 (0.03)***	0.247 (0.03)***	0.105 (0.02)***
Year 12	-0.683 (0.59)	0.021 (0.03)	0.029 (0.02)	0.001 (0.02)
Year 13	0.454 (0.62)	0.235 (0.03)***	0.096 (0.02)***	-0.001 (0.02)
Prior achievement	X	X	X	X
Demographics	X	X	X	X
Observations	1,587	2,706	2,032	2,707

Notes: All analysis from the UCL CEPEO – LSE Covid-19 survey of young people linked to the National Pupil Database. Prior achievement includes total Key Stage 4 points score and total Key Stage 2 score for those in year 12-15, and total Key Stage 2 score and Key Stage 1 level for those in year 9-11. All scores have been standardised to mean 0, standard deviation 1. Demographics include Special Educational Needs (SEN) status and English as an Additional Language (EAL) from the linked National Pupil Database. Some questions were asked only to specific year groups where relevant – those returning to school in this case. Samples are restricted to those who report given outcome. Missing data is imputed to mean values for explanatory variables with a missing dummy included. Standard errors in parentheses. * sig at 10%, ** sig at 5%, ***sig at 1%.

graduate parents were also slightly more likely to report that feeling anxious about the future had a negative impact on their wellbeing. There were no other differences in wellbeing by family background, suggesting socio-economic status may not be as important a factor in young people's wellbeing compared with other characteristics such as gender (which we will explore in [Section 4.3](#)).

How did the Covid-19 pandemic affect young people's future plans? [Table 5](#) explores whether young people reported being more likely to go to further or higher education as a result of the pandemic, or whether they felt it was now more likely they would get a job. Elliot Major et al. (2020) showed that unemployment during the first wave of the pandemic was higher for young people, suggesting that many might be more likely to decide to stay in education, rather than risk entering a degenerating labour market. In fact, we see no particular SES differences in young people's stated likelihood of going into education of any type – although those from non-graduate parent backgrounds are significantly more likely to report that they would 'take any job after university' as a result of the pandemic. This perhaps reflects their knowledge of the poor labour market

Table 4. Socio-economic, ethnic, and gender gaps in wellbeing experiences.

	Standardised wellbeing score	Feeling unmotivated has had a negative impact on wellbeing	Feeling lonely has had a negative impact on wellbeing	Feeling anxious about the future has had a negative impact on wellbeing
Graduate parent	0.072 (0.04)*	-0.005 (0.02)	0.026 (0.02)	0.033 (0.02)*
FSM in past 6 years	-0.072 (0.05)	0.011 (0.02)	0.023 (0.02)	0.017 (0.02)
Male	0.412 (0.04)***	-0.139 (0.02)***	-0.196 (0.02)***	-0.222 (0.02)***
Black	0.014 (0.09)	-0.025 (0.04)	-0.068 (0.04)*	-0.024 (0.04)
Asian (incl Chinese)	-0.126 (0.07)*	0.005 (0.03)	-0.027 (0.03)	0.002 (0.03)
Mixed	-0.123 (0.12)	-0.051 (0.04)	0.020 (0.04)	-0.022 (0.04)
Other	-0.182 (0.12)	0.035 (0.05)	-0.019 (0.05)	-0.015 (0.06)
Year 10	-0.208 (0.07)***	0.069 (0.03)**	0.018 (0.03)	0.078 (0.03)**
Year 11	-0.482 (0.06)***	0.126 (0.03)***	0.086 (0.03)***	0.260 (0.03)***
Year 12	-0.509 (0.06)***	0.134 (0.03)***	0.194 (0.03)***	0.164 (0.03)***
Year 13	-0.646 (0.07)***	0.186 (0.03)***	0.252 (0.03)***	0.302 (0.03)***
Year 14	-0.559 (0.07)***	0.122 (0.03)***	0.279 (0.03)***	0.228 (0.03)***
Year 15	-0.373 (0.07)***	0.116 (0.03)***	0.223 (0.03)***	0.181 (0.03)***
Prior achievement	X	X	X	X
Demographics	X	X	X	X
Observations	3,536	3,794	3,794	3,794

Notes: All analysis from the UCL CEPEO – LSE Covid-19 survey of young people linked to the National Pupil Database. Prior achievement includes total Key Stage 4 points score and total Key Stage 2 score for those in year 12-15, and total Key Stage 2 score and Key Stage 1 level for those in year 9-11. All scores have been standardised to mean 0, standard deviation 1. Demographics include Special Educational Needs (SEN) status and English as an Additional Language (EAL) from the linked National Pupil Database. Samples are restricted to those who report given outcome. Missing data is imputed to mean values for explanatory variables with a missing dummy included. Standard errors in parentheses. * sig at 10%, ** sig at 5%, ***sig at 1%.

that may await them (Anders & Macmillan, 2020). Of course, it may also reflect uncertainty amongst young people about how educational disruption would affect their future work and education choices at this point of the pandemic.

Existing work on the pandemic's educational impact (Andrew et al., 2020; Elliot Major et al., 2020) has revealed widespread learning loss, and showed that those losses were unevenly spread amongst those from different family backgrounds. Our findings confirm this bleak picture. Of course, all young people were impacted by the pandemic and the long period of school closures to some extent but policymakers must be aware that those from poorer backgrounds were disproportionately affected and this will have exacerbated existing educational inequalities. Policies designed to mitigate the impact of lost schooling should target these young people in particular.

4.2. *Gender differences in experiences*

Next, we examine gender differences in experiences of the pandemic. Here, we compare the experiences of male versus female pupils, again holding constant their prior academic attainment, ethnicity, socio-economic and background characteristics.

We find gender disparities by pupils' experience of lockdown learning (Table 2). In particular, boys reported working around 0.18 days fewer per week than girls during the school closure. This discrepancy is of a similar magnitude to the graduate/non-graduate parent gap (with young people with graduate parents working 0.2 days more per week), suggesting we should be just as concerned about gender as socio-economic inequalities when it comes to learning loss. While boys were no more likely than girls to receive help with their learning at home, boys were slightly more likely to receive paid-for tutoring during the lockdown. It is unlikely that this would have been sufficient to make up for the disparity in time spent studying, however, given the relative size of the differences.

Despite spending fewer days per week studying, males were also significantly less likely to report feeling that they been held back by the school closures, upon their return to school, as can be seen in Table 3. Boys were only half a percentage point less likely than girls to say that they felt held back a lot by the school closures.

This provides a hint about the key source of the gender differences that we observe in this survey – that girls had considerably lower wellbeing than boys between November 2020 and January 2021.

Looking at this in detail in Table 4, males have significantly higher wellbeing than females, scoring 0.4 standard deviations higher in the measure of overall wellbeing. Breaking this down further, we can examine which factors in particular may be driving the low wellbeing of females. Columns 2–4 show that males are 14 percentage points less likely to report that feeling unmotivated has had a negative impact on wellbeing, almost 20 percentage points less likely than report that feeling lonely has had a negative impact on wellbeing, and 22 percentage points less likely to report that feeling anxious about the future has had a negative impact on wellbeing. In other words, the gender gap in wellbeing may be driven by lack of motivation, loneliness, and anxiety about the future among females.

It is important to note, however, that the lower wellbeing reported by females may be unrelated to COVID-19, and may simply reflect longstanding differences in wellbeing among young people. Patalay and Fitzsimons (2018), for example, show that among 14 year-olds, females have significantly lower wellbeing than males, with the gender gap emerging between ages 11 and 14. However, the pre-pandemic gap observed by Fitzsimons and Patalay is, at less than 0.1 standard deviations, far smaller than the one we find in our study (although it should be noted that Fitzsimons and Patalay use a different measure of wellbeing). Moreover, a negative impact of the pandemic on females' wellbeing has also been observed by Elliot Major et al. (2020) although for a slightly older age group. They surveyed university students about the extent to which their wellbeing had been affected by the changes induced by lockdown finding a large negative impact of the lockdown for females – who were 12 percentage points more likely to state that their wellbeing had been affected than males. Banks and Xu (2020) also find larger effects of the pandemic on wellbeing for women, albeit in the adult population. Considered alongside this larger body of evidence our findings do not appear to be a pre-

Table 5. Socio-economic, ethnic, and gender gaps in future plans.

	More likely to go to university after A levels as a result of the pandemic	More likely to go on to study apprenticeship after A levels as a result of the pandemic	More likely to take any job after university as a result of the pandemic	More likely to study a post-graduate qual. after university as a result of the pandemic
Graduate parent	0.008 (0.02)	-0.014 (0.03)	-0.099 (0.05)*	-0.018 (0.04)
FSM in past 6 years	0.015 (0.02)	0.021 (0.03)	-0.029 (0.07)	-0.053 (0.05)
Male	-0.015 (0.02)	0.110 (0.03)***	-0.093 (0.05)*	-0.043 (0.04)
Black	0.159 (0.06)***	0.020 (0.06)	0.044 (0.11)	-0.023 (0.08)
Asian (incl Chinese)	0.172 (0.05)***	0.077 (0.06)	0.038 (0.09)	-0.050 (0.05)
Mixed	0.032 (0.04)	-0.045 (0.05)	-0.012 (0.11)	0.028 (0.08)
Other	0.126 (0.07)*	-0.117 (0.07)*	0.134 (0.19)	-0.047 (0.10)
Year 12	-0.029 (0.03)	0.042 (0.03)		
Year 13	-0.003 (0.03)	0.096 (0.03)***		
Prior achievement	X	X	X	X
Demographics	X	X	X	X
Observations	1,417	1,181	465	420

Notes: All analysis from the UCL CEPEO – LSE Covid-19 survey of young people linked to the National Pupil Database. Prior achievement includes total Key Stage 4 points score and total Key Stage 2 score for those in year 12-15, and total Key Stage 2 score and Key Stage 1 level for those in year 9-11. All scores have been standardised to mean 0, standard deviation 1. Demographics include Special Educational Needs (SEN) status and English as an Additional Language (EAL) from the linked National Pupil Database. Some questions were asked only to specific year groups where relevant. Samples are restricted to those who report given outcome. Missing data is imputed to mean values for explanatory variables with a missing dummy included. Standard errors in parentheses. * sig at 10%, ** sig at 5%, ***sig at 1%.

existing gender difference but rather indicate that the pandemic had a differential impact on male and female young people.

While this is the most striking (and concerning) gender difference that we observe in our survey there were other less noteworthy but still important differences on other outcomes. There were no gender differences in changes in intentions to go to university as a result of the pandemic. But males were 10 percentage points more likely to report that they would go on to an apprenticeship after A levels as a result of the pandemic, and were less likely to report they would ‘take any job’ after university as a result of the pandemic.

In summary, in terms of gender inequalities, wellbeing is the most concerning issue. Wellbeing among young females was strikingly lower than young males shortly after the first lockdown, with females feeling more held back at school by the closures, with lower motivation, more anxiety about the future, and loneliness.

4.3. Ethnic differences in experiences

Finally, we turn our attention to differences in experiences of young people across majority and minority ethnic groups. Table 2 shows that, in the first lockdown, young

people from different ethnic groups had broadly similar educational experiences – in terms of the time spent learning, and help received at home. One exception is that, compared to White young people, Black young people reported studying significantly more days per week.

Asian young people, meanwhile, were less likely to report receiving help with school-work but more likely to report having a paid-for tutor during the school closures (Table 2). Interestingly, despite this additional help, Asian pupils were the only ethnic group more likely than White pupils to report feeling held back by the school closures after they returned to school (Table 3). Perhaps in response to this, Asian pupils were also more likely to report receiving paid-for tutoring after the return to school (Table 3). However, they were the only ethnic group to experience significantly lower wellbeing compared to White pupils (Table 4); young Asian people's standardised wellbeing score was 0.12 standard deviations lower than White pupil wellbeing.

How did these experiences translate into young people from different ethnic groups' future plans? Asian, Black and Other ethnic group pupils were all more likely than their White peers to report that they were more likely to go to university after A levels as a result of the pandemic (Table 5).

In summary, the experiences of young people by ethnic group are more complex compared to the clear inequalities that emerge by socio-economic background. The only dimension in which differences consistently emerged was in paid-for tutoring. Asian and Black pupils were more likely than White pupils to receive tutoring during the school closures of lockdown 1, and were also most likely to benefit from it after the return to school, although this difference may also have existed before the Covid-19 pandemic.

4.4. Assessment experiences

This is the first study to be able to interrogate the experiences of pandemic assessment for young people from different backgrounds. Formal exams (both A level and GCSE) were cancelled in 2020. As this decision was taken at a relatively late stage, it was decided that pupils' grades would be determined by a combination of centre assessed grades and their year group rankings. In order to prevent teachers inflating their pupils' likely results, grades were calculated based on the historical results of the school. Although Ofqual reporting showed that these calculated grades were slightly higher than the grades awarded by assessment in 2019, many pupils found their centre assessed grades had been downgraded by the Ofqual 'algorithm'. Following a public outcry, this approach was soon overturned, and pupils were awarded either the grades initially assessed by teachers or the calculated grades, whichever was higher. This led to significantly higher grades in 2020 compared to previous cohorts. This also produced a unique situation where pupils received two sets of grades for their A levels – the algorithm-modified 'calculated grades', and the 'centre assessed grades' or 'CAGs'.

Table 6 shows the differences in CAGs versus calculated grades reported by pupils from different backgrounds. Understanding these differences is important, since it sheds light on which pupils received an advantage from the move to CAGs and, hence, to their future education and employment prospects. The results reveal that while there are limited differences in terms of gender and ethnicity, there are big SES differences. Those with graduate parents benefited significantly more from the switch to CAGs than those from

Table 6. Socio-economic, ethnic, and gender gaps in exam experiences.

	Received higher Centre Assessed Grades (CAGs) than Calculate Grades	Would have preferred to take exams in 2020	Felt that CAGs were better than had expected
Graduate parent	0.143 (0.06)**	0.097 (0.04)**	-0.064 (0.03)**
FSM in past 6 years	0.119 (0.08)	0.036 (0.05)	-0.000 (0.04)
Male	-0.030 (0.06)	-0.046 (0.04)	-0.054 (0.03)**
Black	-0.069 (0.14)	0.082 (0.08)	-0.045 (0.06)
Asian (incl Chinese)	-0.121 (0.11)	0.043 (0.07)	-0.036 (0.05)
Mixed	0.198 (0.10)*	0.044 (0.07)	-0.059 (0.05)
Other	0.413 (0.04)***	-0.020 (0.12)	-0.090 (0.07)
Prior achievement	X	X	X
Demographics	X	X	X
Observations	300	770	960

Notes: All analysis from the UCL CEPEO – LSE Covid-19 survey of young people linked to the National Pupil Database. Prior achievement includes total Key Stage 4 points score and total Key Stage 2 score for those in year 12-15, and total Key Stage 2 score and Key Stage 1 level for those in year 9-11. All scores have been standardised to mean 0, standard deviation 1. Demographics include Special Educational Needs (SEN) status and English as an Additional Language (EAL) from the linked National Pupil Database. Some questions were asked only to specific year groups where relevant – those in exam years in this case, and only those in year 14 (last year's A level cohort for column 1). Samples are restricted to those who report given outcome. Missing data is imputed to mean values for explanatory variables with a missing dummy included. Standard errors in parentheses. * sig at 10%, ** sig at 5%, ***sig at 1%.

non-graduate parent backgrounds, being 14 percentage points more likely to report that their CAGs were higher than their calculated grades, even controlling for prior attainment at Key Stage 2 and 4 scores, and demographic characteristics. However, we find no such difference between FSM and non-FSM pupils, which suggests teachers were careful not to treat FSM pupils (whose status they would be aware of) differently in terms of assessed grades. But they may nonetheless exhibit an unconscious positive bias towards pupils from backgrounds that tend to be associated with higher educational achievement.

That those from better off or more highly educated backgrounds receive more generous predicted/assessed grades is supported by existing evidence, with work by Murphy and Wyness (2020) showing that those from state schools (vs. independent schools) and those from low SES backgrounds (vs. high SES) receive less generous predicted grades. Andrews et al. (2021), meanwhile, highlight the difficult task that teachers have in attempting to predict grades, showing that some pupils (especially high achievers from lower SES backgrounds) have 'noisier' trajectories between GCSE and A level, and are therefore more difficult to predict.

Perhaps surprisingly then, those with graduate parents were 6 percentage points *less* likely to report that they felt their CAGs were better than they expected compared to those from non-graduate parents and these pupils were also more likely to say they would have preferred to sit exams. This probably reflects the higher levels of academic confidence of pupils with higher academically achieving parents.

In summary, our results show substantial disparities in young people's experiences of Covid-19 by socio-economic background. Those with non-graduate parents and who are

FSM eligible studied for significantly fewer days during the school closures of the first lockdown, were more likely to report feeling behind their peers when they returned, and were less likely to benefit from the switch to teacher predicted grades following the exam cancellations. These results hold even when controlling for detailed prior academic attainment and other characteristics.

5. Conclusions

Using a new nationally representative sample of young people across state schools in England we have found large inequalities in the experiences of young people during the Covid-19 pandemic across socio-economic status, gender, and ethnicity. While some previous studies have documented socio-economic and gender gaps in the learning experiences and mental health and wellbeing of young people, our study reports direct experiences of young people themselves, across a wide range of outcomes and experiences, revealing important ethnic disparities.

Inequalities across young people from different SES backgrounds were perhaps the starkest to emerge from our survey. Young people from disadvantaged backgrounds faced a number of barriers throughout the pandemic, with inequalities by socio-economic status arising across lockdown and returning to school experiences, mental health and wellbeing, future plans, and exam cancellation experiences. Young people from disadvantaged families studied for fewer days per week and hours per day, had less support at home and through private tuition, and felt more held back by school closures as a result. They did, however, receive more in-school tuition in autumn 2020. They had lower wellbeing, and higher levels of anxiety about the future caused by the pandemic and were more likely to report that they would take any job that came along after university. Worryingly, this group also benefited least from the cancellation of exams and the later switch to teacher-assessed grades (through the abandonment of the algorithm).

While inequalities by gender and ethnic group are weaker and less consistent across the outcomes considered, there were major gender differences in wellbeing and mental health – girls disproportionately reported lower wellbeing scores than boys and were more likely to report loneliness, anxiety, and a lack of motivation as a result of the pandemic. For those from ethnic minority groups, there are inequalities in terms of help received at home, relative to those from White backgrounds – young Asian people received less help with their studies at home, but more private tuition, and were more likely to report they felt held back a lot by school closures relative to their White counterparts. Both Black and Asian young people reported that they were more likely to go to university after they had finished school as a result of the pandemic, relative to White young people.

We acknowledge limitations to this study. First, due to the timing of data collection, reports of activities during the first period of school closures are based on young people's retrospective reports, which could be biased by hindsight. Our sample does not include private schools, which, while teaching a small proportion of secondary school attendees, have been a particular focus in respect of their ability to respond rapidly to the impacts of the disruption. Furthermore, our sample in any given year group is relatively small, reducing our ability to focus on issues affecting specific cohorts, such as exam

cancellations. These latter two limitations are being addressed in further work, in which we are working with a fresh sample, rather than following up respondents to an existing sample.

While many of the findings reported here may not come as a surprise to informed observers – many of these inequalities existed in the system before the pandemic hit – our findings make an important contribution to the growing evidence that the Covid-19 pandemic will exacerbate existing inequalities. Policy makers should consider how the education system is structured to embed these inequalities in the first place, and consider how policies can help to equalise experiences across young people from different backgrounds, through targeting resources to those most in need.

Given that our findings on differential experiences are likely to feed into widening educational inequalities, a key driver of social immobility (Blanden et al., 2007), our findings suggest that policymakers concerned with equalising opportunities and improving social mobility now face an even bigger task than before. In terms of direct response, our findings suggest the importance of support with both education and mental health for young people who have been disproportionately affected by the disruption wrought – support that we would argue has not been sufficiently forthcoming in our English context (Andrews et al., 2021). Moreover, especially given lower levels of support, further/higher educational institutions and employers should be carefully considering the context in which young people's educational achievements have been attained.

Notes

1. Accounting for initial nonresponse to the 2019 survey, yields a net response rate of 32%.
2. See <https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/howto/> and https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/howto/swemwbs_raw_score_to_metric_score_conversion_table.pdf for how this has been derived.
3. General Certificate of Secondary Education (GCSE) exams are taken by all pupils aged 15/16 in England. Although education is compulsory to age 18, post-16 education can take a number of forms including academic or vocational pathways.
4. For years 12–15 this is Key Stage 4 and Key Stage 2 scores from the linked NPD data, while for years 9–11 this is Key Stage 2 and Key Stage 1 scores from the same source.
5. Note that it may be surprising that we do not have more baseline measures available from the initial survey from which this is a re-contact study. However, the initial survey was primarily focussed on science education and, so, contains few variables that appeared to be appropriate covariates for our modelling.

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