

Schools' responses to Covid-19

Pupil engagement in remote learning

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Executive summary

On 20 March 2020, the British Government ordered schools to close to the majority of pupils. This was a pivotal moment, as the majority of pupils transitioned to learning remotely from home and schools had to adapt rapidly to this new way of teaching. The Department for Education (DfE) has published several pieces of guidance to help schools develop remote learning, recognising that the challenge will vary between schools. The DfE has also committed to providing a package of technology support for specific groups of children and schools, in particular to help meet the needs of disadvantaged pupils who currently do not have access to digital devices or the internet.

While key transition year groups are beginning to return to primary schools and some Year 10 and 12 pupils are having contact with their teachers in secondary schools (DfE, 2020d; 2020e), the majority of pupils are not expected to return to the classroom until the autumn. Remote learning therefore remains at the heart of how schools will need to continue to support pupils' learning in the coming months.

There is widespread concern about the impact this period of remote learning has had on disadvantaged pupils (Andrew *et al.*, 2020; Cullinane and Montacute, 2020; Teach First, 2020; Horrocks, 2020). A review by the Education Endowment Foundation (EEF, 2020a) suggests that the past decade's progress in closing the gap between disadvantaged and non-disadvantaged pupils is likely to be reversed as a result of the Covid-19 pandemic.

Given the potential impact of this extended period of remote learning, NFER undertook an independent assessment to see how engaged pupils are and the factors that might be driving this, as well as how schools are providing remote learning support for pupils. The report is based on findings from a national survey of 1233 senior leaders and 1821 teachers in publicly-funded, mainstream primary and secondary schools in England. Responses between 7 and 17 May have been weighted by phase and free school meal (FSM) eligibility¹ to provide a nationally representative picture. We recognise that a number of factors are likely to influence pupils' engagement, including access to IT, their parents' engagement², and the type of support received from their schools. We explore these issues throughout the report.

Key findings

Pupil engagement

- **Teachers are in regular contact with, on average, 60 per cent of their pupils. However, on average, less than half of pupils (42 per cent) returned their last piece of set work.** Most teachers (90 per cent) believe that their pupils are doing less or much less work than they would usually expect at this time of year.
- **Despite high levels of leadership guidance and teachers' readiness to provide remote learning support, there is currently a substantial deficit in curriculum coverage across schools.** Almost all senior leaders say they are providing guidance on the *type* (95 per cent), and *amount* (90 per cent) of work teachers should be setting, and *whether* they should be providing *feedback* to pupils on submitted work (85 per cent). The majority of teachers (between 66 and 75 per cent) rate their ability to offer remote learning support to pupils as 'good or very good' for most of the aspects included in the survey. Yet 80 per cent of teachers report that all or certain areas of the curriculum are currently getting less attention than usual, across many subject areas, including all core curriculum subjects.
- **Teachers report that, on average, just over half (55 per cent) of their pupils' parents are engaged with their children's home learning.** Parental engagement is significantly lower among the parents of secondary than primary pupils (48 compared to 56 per cent). This is likely to be influenced by the age of the pupils. Parents of secondary school pupils are more inclined to think that their children are able to manage their own learning.
- **Limited pupil access to IT is a significant challenge.** We asked senior leaders and teachers what proportion of their pupils have little or no IT access at home. They report that this is a challenge for around a quarter of their pupils (senior leaders report 23 per cent and teachers, 27 per cent)³. The challenge is widespread, with the vast majority of leaders and teachers saying that at least some of their pupils have little or no access to IT at home.

1 Free school meal eligibility is used as a proxy for disadvantage.

2 In this report we use the word 'parent' to refer to parents and carers.

3 In making their judgement about the proportion of pupils with little or no IT access, we asked respondents to think about pupils with poor broadband access, little or no IT equipment in the home, and pupils who have to share equipment with other family members.

- **Teachers are concerned about the engagement of all their disadvantaged pupils⁴, but are most concerned about low engagement from pupils with limited access to IT and/or those who lack space to study at home.** Teachers report that the following proportions of pupils are less engaged than their classmates: pupils with limited access to IT and/or study space (81 per cent); vulnerable pupils (62 per cent); pupils with special educational needs and disabilities (SEND) (58 per cent); pupils eligible for Pupil Premium funding (52 per cent); and young carers (48 per cent).

Factors that influence engagement

We used statistical modelling to determine which factors are most closely associated with the engagement of pupils in general, and *disadvantaged* pupils in particular. The following factors emerge.

- **The level of disadvantage of the school:** Pupil engagement and *disadvantaged* pupil engagement are both lower in the most deprived schools. Teachers in the most deprived schools are in contact with fewer pupils and also feel that fewer of their parents are engaged. The proportion of pupils with little to no IT access in the most deprived schools is double that of the least deprived schools. Teachers in the most deprived schools are more likely than those in the least deprived schools to say that all areas of the curriculum are currently getting less attention than usual. However, teachers in the most deprived schools are more likely to feel well-supported by their schools to help pupils to learn remotely.
- **Phase and school type:** Although secondary teachers report more pupils returning work than primary teachers, they are more likely than primary teachers to say that *disadvantaged* pupils are less engaged than their classmates. Secondary teachers are also more likely to have pupils with IT challenges, and to say that their personal hardware/equipment is poor/ very poor. Secondary leaders are more likely to provide guidance to staff on remote learning, and to expect pupils to submit work. Primary teachers are likely to be in contact with more of their pupils, but to be covering less of the curriculum than secondary teachers. Maintained schools also have less curriculum coverage than academy schools, and academies are likely to have higher pupil engagement than maintained schools (although it is important to note that school

phase and type are related, as more primaries are maintained and more secondaries are academies).

- **Region:** Teachers in the West Midlands have lower levels of pupil engagement than in London. Schools in some of the northern regions of England have lower levels of parental engagement, pupil access to IT, and the proportion of teachers receiving guidance on the amount of work to be set and submitted, relative to some southern regions. Schools in some northern regions are also less likely to be engaging in online conversations between teachers and pupils, or pre-recorded video lessons (both of which are positively associated with pupil engagement) than schools in the south.
- **School and teacher contextual factors:** Schools with low prior attainment and schools which experienced a significant drop in the numbers of pupils attending school prior to 20 March have lower levels of pupil engagement. Teachers who feel well-supported by their school, and teachers who teach Key Stage 5 have higher levels of engagement. When pupils in general and *disadvantaged* pupils are taught by relatively young teachers (those aged 20-29), they have lower levels of engagement. *Disadvantaged* pupil engagement is higher when teachers report having a good quality home working environment.
- **The nature of remote learning support:** Schools using a virtual learning environment (VLE) to inform pupils about learning activities – rather than the school website, and those delivering learning content to pupils through online conversations or activities that involve consolidating previous learning or revising, have higher pupil engagement levels and an increased probability of having highly engaged *disadvantaged* pupils. Teachers that give less attention to all areas of the curriculum than normal also have lower levels of pupil engagement.



It is important that leaders and teachers focus on the most effective means of supporting pupils' learning, such as how to achieve high-quality teaching.

⁴ Those disadvantaged pupils who (at the time this survey was conducted) were being supported to learn remotely from home. Our definition excludes pupils defined by the Government as vulnerable or the children of keyworkers who were attending school at the time.

Conclusion

Although schools are beginning to open more fully, the majority of pupils in England are currently learning remotely, from home. It is a major concern that pupils who would normally attend the most deprived schools are less likely to be engaged in remote learning than those who would normally attend the most affluent schools. Disadvantaged pupils are also less likely to be engaging in remote learning if the school they would normally attend has a high proportion of similarly disadvantaged pupils. On average, secondary pupils are more engaged in remote learning than primary pupils, in terms of returning set work.

Implications for government, academy trusts and local authorities

Thus far, the Government has prioritised six year groups for a return to school in June because they are at key transition points in their education (DfE, 2020d; 2020e). However, it is also critical to get disadvantaged pupils, pupils in the most disadvantaged schools, and pupils with little or no access to IT and/or study space, back to school as soon as it is safe to do so. During this unprecedented and unplanned period of home learning, it will be critical to broaden access to digital devices to a wider range of disadvantaged pupils in order to avoid any accumulation in disengagement.

With some Nursery, Reception, Year 1 and Year 6 pupils returning to school across split classes, and with Year 10 and 12 pupils spending some time in school with their teachers, schools will have more limited teaching capacity to maintain high-quality remote support for pupils in Years 2-5 and 7-9 (Sharp *et al.*, 2020). They are likely to need support to enable them to promote effective ongoing remote learning.

Given the positive link between pupil engagement and schools' use of VLEs, it may be worthwhile to promote the benefits of these platforms to schools, to increase the number of schools using VLEs, and to support schools to implement them. Government, Trusts, LAs and senior leaders also need to ensure that teachers have access to sufficient training and equipment to enable them to deliver effective remote learning support and to use technology effectively.

Further investigation is needed to understand several of the issues highlighted in this report. These include the challenge of engaging and supporting pupils with SEND (whom our research has found to be disadvantaged to a comparable degree to vulnerable pupils and pupils in receipt of Pupil Premium funding); and the reasons why so few senior leaders (just ten per cent and three per cent respectively) are considering utilising the 'EdTech Demonstrator Programme' or 'The Key for School Leaders' support for educational platforms', which are aspects of the Government's support offer.

Implications for senior leaders

For as long as the pandemic continues, it is important that schools work towards restoring as much of the curriculum as possible via remote teaching and learning. Senior leaders will need to decide how to deploy staff who are not able to work on the school site to support this effort. Senior leaders should continue providing remote learning support and guidance for all their staff, but may wish to put additional support strategies in place for younger teachers, who are comparatively inexperienced and may lack confidence, for example by providing CPD on effective strategies for remote teaching. School governors, local authorities and Trusts also need to ensure that leaders themselves have the appropriate support for their role.

While schools' resources are being stretched by the increased staffing and other requirements needed to address the impact of Covid-19, it is important that leaders and teachers focus on the most effective means of supporting pupils' learning, such as how to achieve high-quality *teaching* (as opposed to ensuring that there is a flow of set work), and doing everything they can to support parents to support their children. Schools may also wish to consider the possibility of expanding their range of 'active' forms of teaching and learning, such as online conversations between teachers and pupils, which have a positive association with pupil engagement (though this needs to be balanced against the increased demands on staff). Guidance from the EEF on remote learning (2020b) highlights that it is important to couple these activities with explicit guidance for pupils on how to manage their own learning and work independently.

Introduction

On 20 March 2020, the British Government ordered schools to close to the majority of pupils. This was a pivotal moment for schools in England, as the majority of their pupils transitioned to learning remotely from home and schools had to adapt rapidly to this new way of teaching. In April, the Department for Education (DfE, 2020a) published new guidance for schools on remote education. This advised on pupil well-being, adapting teaching practice and the curriculum, and keeping pupils motivated and engaged. The guidance recognised that the nature and challenge of remote learning would differ between schools and highlighted the important role of parents. The DfE (2020b; 2020c) also published guidance on a package of technology support for some children and schools, including equipment for disadvantaged pupils who currently have no access to digital devices or the internet.

While key transition year groups (Nursery, Reception, Year 1 and Year 6) have begun to return to the classroom in primary schools and some Year 10 and 12 pupils are having contact with their teachers in secondary schools (DfE, 2020d; 2020e), others are not expected to return to the classroom until the autumn. Remote learning therefore remains at the heart of how schools are continuing to support pupils' learning.

Recent research (Andrew *et al.*, 2020) into the impact of Covid-19 on children's education at home suggests that, while primary and secondary school pupils are each spending about five hours a day on home learning, more than half of parents are finding it quite or very hard to support their child's learning.

Evidence is mounting of the differential impact on education among pupils from disadvantaged backgrounds. For example, children from the poorest fifth of homes are spending an average of 1.3 hours per day less on remote learning than children in the highest-income families (Andrew *et al.*, 2020). Similarly, higher proportions of middle-class families are participating in

live or recorded lessons each day than working class families (Cullinane and Montacute, 2020). A review by the Education Endowment Foundation (EEF, 2020a) suggests that the past decade's progress in closing the disadvantage gap is likely to be reversed as a result of the pandemic.

A fundamental issue underpinning these differences is the role of information technology. About one million children and their families in England lack access to a device or connectivity at home (Horrocks, 2020). Notable proportions of teachers (between 15 and 25 per cent) in the most deprived schools report that at least one fifth of their pupils do not have adequate access to electronic devices or the internet, though the exact proportion differs between studies (Cullinane and Montacute, 2020; Teach First, 2020). This highlights the importance of ensuring that disadvantaged pupils have access to appropriate technology so that they are able to participate fully in remote learning (EEF, 2020a; Horrocks, 2020). Other factors are also likely to be important in explaining differences in the ability of children to learn at home, including the support they receive from their parents, the availability of appropriate space to study, pupils' abilities to manage their own learning and the nature of support provided by their schools.

Given the potential impact of this extended period of remote learning, NFER has undertaken an independent assessment of how engaged pupils are in remote learning; what factors might be driving this, particularly among disadvantaged pupils; and how schools have been providing remote learning to their pupils. The report is based on findings from a national survey of 1233 senior leaders and 1821 teachers in publicly-funded, mainstream primary and secondary schools in England. Responses between 7 and 17 May have been weighted by phase and free school meal (FSM) eligibility⁵ to provide a nationally representative picture.



5 Free school meal eligibility is used as a proxy for disadvantage.

Box 1. NFER survey of schools' responses to Covid-19

Sample

From 7 to 17 May 2020, NFER collected data via a survey sent to all 20,553 state-funded mainstream primary and secondary schools in England. We asked senior leaders (head teachers, principals and deputy head teachers) to complete the survey themselves and pass the survey on to up to two teachers of different key stages (primary schools), or up to four teachers of different subject areas (secondary schools). We received responses from 1233 senior leaders and 1821 teachers in 1462 primary schools (including middle deemed primary) and 691 secondary schools (including middle deemed secondary and all-through schools), representing nine per cent of the 17,170 primary schools and 20 per cent of the 3383 secondary schools in England. We weighted the data to ensure that our findings are representative of mainstream schools in England. Some schools provided more than the requested number of responses, which was also addressed by weighting the data.

Data collected

The survey focused on four main areas: schools' provision of remote learning during the Covid-19 pandemic and pupils' engagement; schools' provision for vulnerable children and children of keyworkers; staff workload and work satisfaction; and schools' preparedness for opening more fully after lockdown. The survey also asked respondents for some information about themselves, including their job role, time in teaching, gender and age.

Analysis

The NFER team used DfE **administrative data** to identify the characteristics of each school, including: phase, proportion of pupils eligible for free school meals (FSM), school type (local authority or academy), and region. Weighting used the distribution of the achieved sample relative to the national population of school phase and FSM quintile. Weightings were adjusted to account for the number of responses per school.

The analysis used three main approaches: descriptive statistics for all of the survey questions; tests of statistical significance to identify associations between selected questions and school characteristics; and regression models for pupil engagement with learning, engagement of disadvantaged pupils, work satisfaction, workload, and preparedness for opening schools more fully. Results were considered statistically significant if the probability of a result occurring by chance was less than five per cent ($p < 0.05$).

Reports

This research is producing the following reports on Schools' Responses to Covid-19:

1. Returning pupils to school
2. Pupil engagement in remote learning
3. Support for vulnerable pupils and the children of keyworkers
4. Job satisfaction and workload of teachers and senior leaders
5. Summary of key findings
6. Technical report.

A second survey will take place in July 2020, with findings to be published later in the summer.

Pupil engagement in remote learning

This section sets out the extent to which pupils in England are engaging with the remote learning provided by their schools and teachers. It focuses on the majority of pupils in England who (at the time of the survey) were being supported to learn from home. It does not include findings on pupils defined by the Government as vulnerable or the children of keyworkers who were attending school at this time (as this is the subject of a separate report). The findings primarily draw on data from teachers, who are most able to comment on the engagement of their pupils.

We have explored the issue of engagement in a number of ways, including asking teachers and senior leaders⁶ about the degree to which pupils are engaged in set learning activities, and how much work they are doing compared to normal expectations at this time of year. To provide a more specific measure of engagement, we also asked teachers about the last piece of work they set for pupils and how their pupils responded.

We have analysed the answers to all individual questions according to phase (primary/secondary), deprivation (proportion of pupils eligible for free school meals (FSM)) and region, but have only reported differences where these are statistically significant at the five per cent level ($p < 0.05$)⁷. All percentages are based on the number of people responding to the question, excluding non-responses (valid percentages). Similarly, percentages may not sum to 100 due to rounding.

Pupils returning set work and contact with teachers

Teachers are in regular contact with, on average, 60 per cent⁸ of their pupils⁹. However, on average, less than half of pupils (42 per cent¹⁰) returned their last piece of set work. Ninety per cent of teachers say their pupils are doing less or much less work than they would usually expect at this time of year.

Although the percentage of pupils returning work is relatively low, senior leaders indicate that more pupils

are getting involved in work or learning activities than are returning work¹¹. On average, primary senior leaders say that 71 per cent of pupils¹² are getting involved in learning activities, while senior leaders in secondary schools indicate that an average of 63 per cent¹³ of pupils are getting involved in set work. It is concerning though that senior leaders believe that around one third of pupils (29-37 per cent) are not engaging with set work at all.

These findings indicate that during the period where most pupils were learning from home, there was a moderate level of pupil engagement in remote learning. This is in spite of the fact that almost all senior leaders say they are providing guidance on the *type* of work that teachers should be setting (95 per cent), the *amount* of work they should be setting (90 per cent), and *whether* they should be providing *feedback* to pupils on submitted work (85 per cent). This is encouraging, indicating that senior leadership teams are providing clear expectations and a solid base on which to build high-quality remote learning provision now and in future. However, fewer senior leaders are setting expectations for their staff about the *submission of work by* pupils. This may partially explain the relatively low proportion of pupils who are returning set work.

Parental engagement

Teachers report that, on average, just over half (55 per cent) of their pupils' parents are engaged with their children's home learning.

A key consideration for senior leaders and teachers is how they can engage and enable parents to support their child's remote learning effectively. Drayton (2020) highlights the potential influence parents have on their child's outcomes, suggesting that differences in parents' abilities and resources to support their children's remote learning can lead to a widening of educational inequalities. Working closely with parents has been identified as an important avenue through which schools are able to improve pupil engagement and minimise the widening of educational inequalities.

6 We refer to 'senior leaders' rather than 'school leaders' in this report because we received responses from more than one senior leader per school (957 primary senior leaders from 892 schools and 276 secondary senior leaders from 245 schools).

7 A Bonferroni adjustment (Bonferroni, 1936) was applied where appropriate.

8 The confidence intervals indicate that the true value lies between 59 and 62 per cent ($p < 0.05$).

9 This is not solely a measure of engagement in learning, as teachers are in contact with their pupils to support their overall well-being as well as to support and engage pupils with learning activities.

10 The confidence intervals indicate that the true value lies between 41 and 43 per cent ($p < 0.05$).

11 All senior leaders who responded to this question report that their schools are currently providing work for pupils.

12 The confidence intervals indicate that the true value lies between 69 and 73 per cent ($p < 0.05$).

13 The confidence intervals indicate that the true value lies between 59 and 66 per cent ($p < 0.05$).

The Education Endowment Foundation has published guidance on working with parents to support children's learning (EEF, 2019), suggesting that schools need to review how they work with parents and carefully define their approach to working with them in future. Although schools need to tailor their approach to fit the needs of their parents for each year group, this guidance offers the following principles for schools.

1. **Provide practical strategies that parents can use.** Strategies that incorporate activities such as book reading are likely to be familiar to parents and may feel manageable. Similarly, help parents to create regular routines for their child's remote learning.
2. **Review your approach to communicating with parents.** Regular personalised communication which encourages a positive dialogue is most effective. In light of the stress that the impacts of Covid-19 are placing on many families, it is particularly important to ensure parents feel consulted and able to express their views, and that teachers are proactive about celebrating remote learning successes.
3. **Consider offering more sustained and intensive support where parents need it.** Given that schools are currently facing reduced teacher capacity (Sharp *et al.*, 2020), they will need to identify how to prioritise limited resources on families who need the most support. Schools should focus on empowering parents to support remote learning by building their efficacy. Building non-judgemental, trusting relationships is key for engaging parents and supporting them to engage children in remote learning.

In an open-ended question about what would help teachers to provide remote learning more effectively in future¹⁴, a prevalent theme was the need for closer working relationships with parents. Many of the comments reflect the principles above – particularly in relation to helping parents to create regular routines for their children and developing a positive dialogue

about learning. Examples of what teachers feel would be helpful for improving parental engagement are given below.

'Time to prepare families for what is expected from them regarding home learning and keeping in contact with school.'

'Asking parents what they would find most useful in aiding their children to learn from home.'

'Contact to involve more challenged parents, to give them confidence.'

'Training and support for parents, especially those who have their own barriers to learning or speak English as an additional language.'

Pupils' access to IT

Limited pupil access to IT is a key challenge facing schools attempting to engage pupils in remote learning.

We asked senior leaders and teachers what proportion of their pupils have little or no IT access at home. They report that this is a challenge for around a quarter of their pupils¹⁵. On average, senior leaders report that this is true for 23 per cent¹⁶ of their school's pupils, while teachers report that, on average, 27 per cent¹⁷ of the pupils they teach have little or no IT access.

The challenge is also widespread, with the vast majority of leaders and teachers saying that at least some of the pupils in their schools have little or no access to IT at home. On average, 86 per cent of senior leaders report that their school has pupils who have little or no access to IT, while 75 per cent of teachers report that they teach some pupils with a lack of IT access. In response to an open question, teachers repeatedly highlight the importance of 'all students having good and reliable access to appropriate technology'. One teacher explained the nature of the IT challenges pupils are facing, saying: 'A parent's phone isn't sufficient to do work on and most are sharing with several siblings'.

14 1281 teachers responded to this question.

15 In making their judgement about the proportion of pupils with little or no IT access, we asked respondents to think about pupils with poor broadband access, little or no IT equipment in the home, and pupils who have to share equipment with other family members. This figure represents the mean across schools.

16 The confidence intervals indicate that the true value lies between 22 and 24 per cent ($p < 0.05$).

17 The confidence intervals indicate that the true value lies between 26 and 28 per cent ($p < 0.05$).

The level of engagement among disadvantaged pupil groups

Teachers are concerned about the engagement of all their disadvantaged pupils, but are most concerned about low engagement from pupils who have limited access to IT and/or space to study at home.

We asked teachers about different groups of educationally disadvantaged pupils and the extent to which they are engaging with remote learning, relative to their classmates. Figure 1 (on page 11) shows that, on average, teachers believe the following proportions of pupils to be less engaged than their classmates: those with limited IT/space to study at home (81 per cent), vulnerable pupils (62 per cent) SEND pupils (58 per cent)¹⁸, pupils eligible for Pupil Premium funding (52 per cent), and young carers (48 per cent). Thus far, research and comment has focused more on the impact of Covid-19 on vulnerable children and pupils from economically disadvantaged backgrounds than on how SEND pupils have been impacted. This evidence suggests that engagement is low among pupils with SEND attending mainstream schools and comparable to that of vulnerable pupils (including those who have an Education, Health and Care Plan (EHCP)). Further investigation is needed to understand how these pupils are being impacted by Covid-19 and to ensure that this group of pupils is not overlooked.

Teachers' ability to support remote learning

Teachers feel well-equipped to provide remote learning support for pupils but are less satisfied with the quality of their home working environment.

In general, teachers feel well-equipped for providing remote learning support for pupils, both in terms of the support they are receiving from their schools, and their personal confidence and skills in using IT. Figure 2 (on page 11) shows that most teachers (around two-thirds to three-quarters) rate their ability to offer remote learning support to pupils as 'good or very good' for most of the aspects included in the survey.

However, one fifth of teachers describe the quality of their home working environment and their ability to work without distractions as very poor/poor. Given that senior leaders said that over 20 per cent of teachers, on average, were only available to work at home (Sharp *et al.*, 2020) this is likely to restrict their ability to contribute effectively to supporting remote learning and other activities.

In an open question, we asked teachers what would help them to provide remote learning more effectively in future¹⁹. Their responses cover a wide range of issues, but a key area is a demand for better provision of IT equipment and facilities, both for staff and pupils. For example, teachers state that their school does not provide staff with laptops and that they are reliant on their personal resources. Furthermore, teachers feel that they need training and development in remote learning approaches to improve their skills and abilities to teach in this way. Specific topics identified for training include: video recording and editing, using virtual learning environments (VLEs) effectively, and effective remote learning strategies.

'Laptops provided for all staff to use at home. As I am Careers Leader, I already had my own laptop to use but other staff may struggle with sharing home facilities. Using an iPad or phone is ridiculous.'

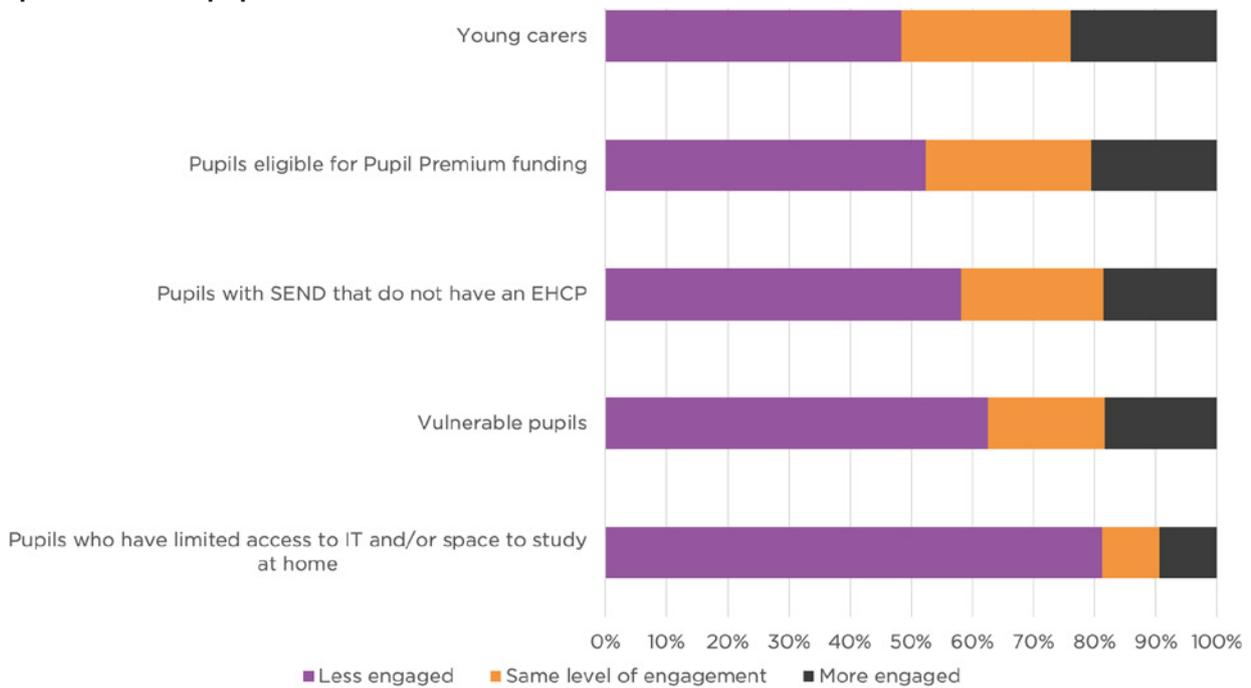
'More training on specific applications. Obviously we went from classroom to online, overnight! We had limited online resources in place prior to lockdown (just the way it was) and so school have been providing training online as we go. It's working as best as it can for now. Going forward, it would be good to consider across all subjects, the best, most effective methods of virtual learning for our pupils.'

'Lots of training! Remote learning will be a massively useful addition to our work after this crisis is over. CPD needs to be built into the provision for next year.'

18 Defined as pupils with special educational needs and disabilities (SEND) that do not have an Education, Health and Care Plan (EHCP). An EHCP is a plan for children and young people aged up to 25 who need more support than is available through special educational needs support. EHCPs identify educational, health and social needs and set out the additional support to meet those needs.

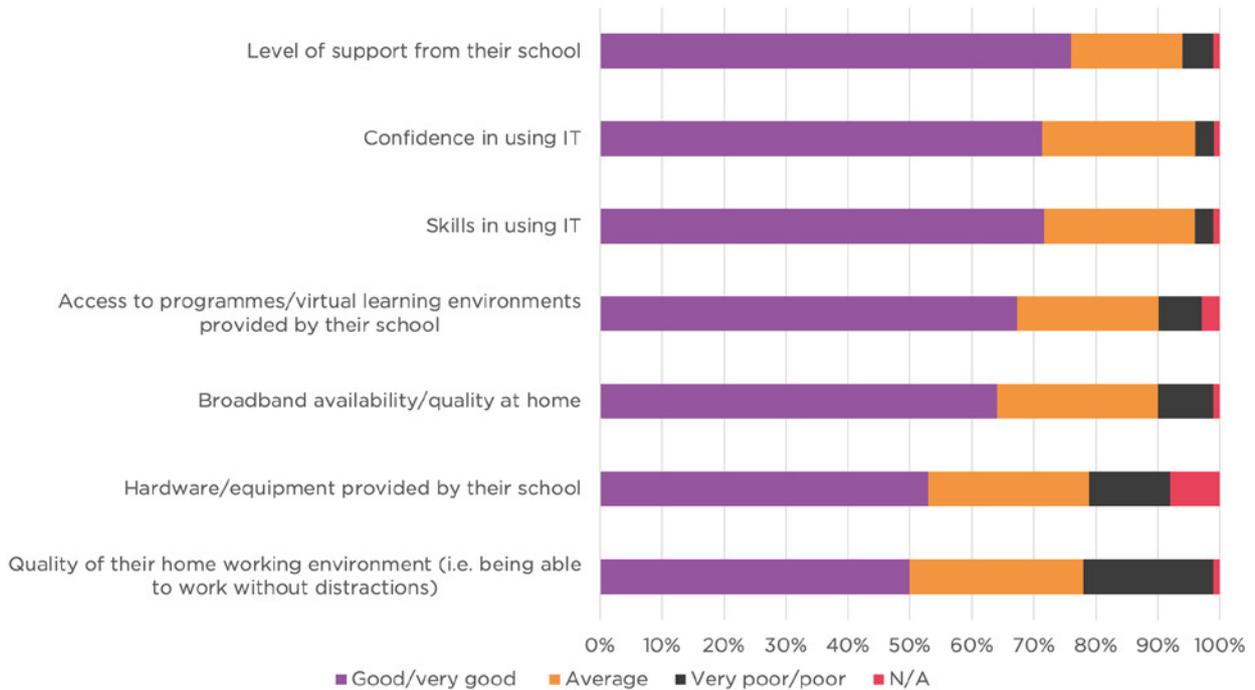
19 1281 teachers responded to this question.

Figure 1: The extent to which teachers feel different groups of pupils are engaging in learning activities compared to other pupils



Source: NFER survey of 1821 teachers: 1610 teachers responded to at least one of these questions. Note that the groups represented are not mutually exclusive and are likely to overlap.

Figure 2: Teachers' views of their ability to support pupils to learn remotely



Source: NFER survey of 1821 teachers: 1799 gave at least one response.

Curriculum coverage

In spite of high levels of leadership guidance and teachers' readiness to provide remote learning support, there is currently a substantial deficit in curriculum coverage across schools.

Four-fifths of teachers (80 per cent) report that all or certain areas of the curriculum are currently gaining less attention than usual. In an open question, we asked teachers which subjects are gaining less attention than usual, and why. They named the following, in descending order of frequency: English/literacy; music; science; religious education; physical education; personal, social and health education; mathematics/numeracy; art and design; history; geography; languages; and design and technology²⁰. This list includes all primary and secondary core curriculum subjects. Teachers provided two main reasons for reduced curriculum coverage.

1. **Provision challenges:** including having poor access to the necessary resources when working from home; a need to focus the curriculum around specific components considered manageable for home learning; and avoiding content that is difficult to teach remotely (because it requires more teacher guidance, or more interaction among pupils than teachers feel it is possible to provide through distance learning).
2. **Engagement challenges:** including limited parent confidence in supporting their children's learning and a general lack of pupil motivation or engagement.

What factors are associated with pupil engagement in remote learning?

Overview of findings from our statistical modelling

We used two regression models to investigate which factors are most closely associated with pupil engagement. These allow us to examine the association between different variables and pupil engagement more

effectively than looking at variables on their own, as in the previous sections of this report. By controlling for a number of factors simultaneously, we can draw out differences related to pupil engagement over and above the effects of other factors, such as school and teacher characteristics.

The first model looks at which factors influence pupil engagement in general, using the proportion of pupils returning their last piece of set work as the key measure of engagement.

The second model looks at which factors influence the likelihood of disadvantaged pupils being highly engaged. This model focuses exclusively on pupils eligible for Pupil Premium funding, rather than on wider categories of disadvantage as outlined in Figure 1 above. Our key measure is schools with high overall pupil engagement²¹, who report that their disadvantaged pupils have the same or higher levels of engagement than the rest of their pupils.

Our modelling takes account of the following variables in order to identify the relative contribution of the range of factors that might be influencing pupil engagement.

- school characteristics (Ofsted rating, phase, attainment quintile, FSM quintile, region, school type)
- teacher characteristics (age group, gender, key stage taught, subject taught)
- tools used to inform pupils/parents about learning activities²²
- tools used to deliver learning content to pupils
- teachers' ability to support pupils' remote learning
- most recent learning activity set by the teacher
- impacts of Covid-19 on the school prior to 20 March
- areas of the curriculum getting less attention than usual.

We tested a large number of variables in our models, many of which did not appear to be significantly related to pupil engagement. (See Appendix 1 for more detail on the variables that were tested in the models.)

²⁰ 1216 teachers responded to this question.

²¹ Where high engagement is measured by at least 60 per cent of pupils returning the last piece of set work.

²² Using 'other' resources to communicate with pupils and parents is also associated with pupil engagement. This variable will encompass a broad range of communication methods and as such has not been reported.

Table 1 identifies factors which are significantly associated with the engagement of pupils in general and of disadvantaged pupils in particular, at the five per cent level ($p < 0.05$). Overall, we find that the factors that appear to impact on the engagement of disadvantaged pupils are almost all the same as those that influence pupil engagement in general.

Findings related to school- and teacher-level factors are discussed below. Findings related to the nature of remote learning support factors are discussed later in this report.

Table 1: Factors significantly associated with general pupil engagement and/or the likelihood of disadvantaged pupils being highly engaged relative to their classmates

	Factors associated with lower engagement	Factors associated with higher engagement
Both models General pupil and disadvantaged pupil engagement	<p>School- and teacher-level factors</p> <ul style="list-style-type: none"> Schools with the highest proportions of pupils eligible for free school meals (FSM)²³ Teachers aged between 20 and 29 <p>Remote learning support factors</p> <ul style="list-style-type: none"> Using the school website to communicate with pupils and parents 	<p>Remote learning support factors</p> <ul style="list-style-type: none"> Using a virtual learning environment to communicate with pupils and parents Delivering learning by having online conversations with pupils Setting activities that involve consolidating previous learning or revising
Model 1 only General pupil engagement	<p>School- and teacher-level factors</p> <ul style="list-style-type: none"> Schools located in the West Midlands Schools with lower prior attainment levels²⁴ Schools which experienced a significant drop in pupil attendance prior to 20 March <p>Remote learning support factors</p> <ul style="list-style-type: none"> All areas of the curriculum getting less attention than usual 	<p>School- and teacher-level factors</p> <ul style="list-style-type: none"> Teachers based at an academy Teachers receiving a good level of support from the school Teachers working with KS5 pupils <p>Remote learning support factors</p> <ul style="list-style-type: none"> Using telephone/video calls to communicate with pupils and parents
Model 2 only Engagement of disadvantaged pupils	(No unique factors)	<p>School- and teacher-level factors</p> <ul style="list-style-type: none"> Quality of teachers' home working environment

²³ See Appendix 2 for more information on how the proportion of pupils eligible for FSM in schools is used to generate school-level FSM quintiles, which have been included in the statistical model.

²⁴ Based on the school's performance at Key Stage 2 or Key Stage 4.

Findings related to the level of disadvantage in school

Pupil engagement is likely to be lower in schools with the highest levels of deprivation. Similarly, disadvantaged pupils in the most deprived schools are less likely to be highly engaged than their classmates, compared with disadvantaged pupils in the most affluent schools.

Our general model of pupil engagement finds that teachers from schools with the highest levels of pupil deprivation (those in the highest FSM quintile²⁵) report 13 percentage point lower levels of pupil engagement relative to teachers from schools in the middle quintile²⁶. Our second model finds that the most deprived schools are associated with a 12 percentage point decrease in the probability of a high level of engagement among their disadvantaged pupils. Schools with lower levels of deprivation overall appear to have been able to sustain more comparable levels of engagement among their disadvantaged and more advantaged pupils, despite these groups of pupils not currently being in class together.

A number of studies suggest that disadvantaged pupils are less likely to receive high-quality remote learning support during the pandemic than their more advantaged peers (Cullinane and Montacute, 2020;

Horrocks, 2020; Sutton Trust, 2020; Teach First, 2020). Our findings demonstrate the impact that being from a disadvantaged background is having on pupils' *engagement in learning*. They mirror the findings from the recent IFS study of parents outlined earlier in this report (Andrew *et al.*, 2020) which found that, while children in the highest-income families spend 5.8 hours per on day home learning, those in the poorest fifth of households spend only 4.5 hours per day.

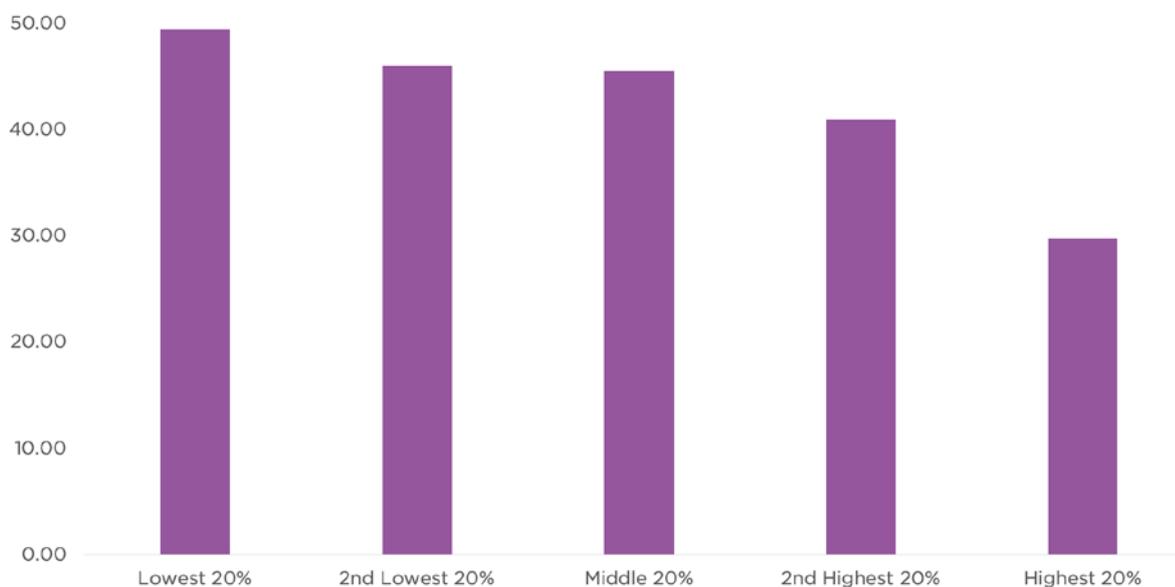
The proportion of pupils returning set work

Teachers in the most deprived schools report 30 per cent of pupils returning work, compared to 49 per cent of pupils in the least deprived schools.

Increased proportions of FSM pupils in school are associated with lower proportions of pupils returning work, as shown in Figure 3. This figure shows the percentage of pupils returning work to their teacher as reported by teachers, according to FSM band.

There is also a large difference between the most deprived schools and the second most deprived schools, where 41 per cent of pupils are returning work. This suggests that a lack of pupil engagement is an acute issue in schools serving the most disadvantaged populations.

Figure 3: The percentage of pupils returning work, by FSM quintile



Source: NFER survey of 1821 teachers: 1277 teachers responded to this question who could be matched to a school FSM quintile.

25 This analysis compares responses from schools divided into five quintiles, representing the lowest to highest proportion of pupils with FSM. These results were statistically significant ($p < 0.05$). For further information on these quintiles see Appendix 1.

26 The baseline group is defined as male primary KS2 teachers aged between 40 and 49 who are based in London in a 'good' LA-maintained school that is in the median FSM and attainment quintiles.

The proportion of pupils getting involved in work

Table 2 shows the proportion of senior leaders that say pupils are getting involved in work, by FSM band. This also decreases with higher levels of school deprivation. The figures in the table are based on a relatively small number of senior leaders who said they expected pupils, or their parents, to let them know about the work they had been involved in, or to submit it.

Table 2: The proportion of pupils getting involved in learning activities or work reported by senior leaders, by school-level FSM quintile

FSM Quintile	Primary (%)	Secondary (%)
Highest 20%	55	48
Second highest 20%	66	57
Middle 20%	76	66
Second lowest 20%	76	67
Lowest 20%	79	77

Source: NFER survey of 1233 senior leaders: 141 secondary and 465 primary leaders with FSM quintile information gave a response.

Senior leaders in primary schools in the middle, second lowest, and lowest FSM quintiles report significantly higher proportions of pupils getting involved in learning activities than those whose schools are in the second highest and highest quintiles. Similarly, senior leaders in secondary schools in the highest and second highest quintiles report that significantly fewer of their pupils are getting involved in work set than those in schools in the lowest FSM quintile.

Parental engagement

Teachers from the most deprived schools report that parental engagement is significantly lower than teachers in the least deprived schools (41 per cent

compared to 62 per cent). There are also significant regional differences in parental engagement that may be related to regional deprivation. This is discussed later in the report.

Pupils' access to IT resources at home

Twice as many pupils in the most deprived schools have little or no IT access compared to those in the least deprived schools.

According to teachers, the proportion of pupils with little or no access to IT in the most deprived schools (39 per cent) is double that of pupils in the least deprived schools (19 per cent)²⁷. Similarly, teachers and senior leaders in the most deprived schools are significantly more likely to report having some pupils with limited access to IT than those in the least deprived schools. Ninety-three per cent of senior leaders from the most deprived schools have some pupils with limited access to IT, compared with 73 per cent of senior leaders from the least deprived schools.

This adds to the existing evidence base, indicating that pupils in the most deprived schools are distinctly less likely to have the adequate IT to engage in remote learning compared to their peers in the least deprived schools (Cullinane and Montacute, 2020; Teach First, 2020). The Education Endowment Foundation's recent guidance on evidence-based approaches to remote learning (EEF, 2020b) stresses that it is critical for young people to have digital access in order to avoid increased educational inequality.

On 19 April 2020, the DfE announced a funding stream for remote learning in the form of digital devices and 4G hotspot devices for care leavers, pupils with social workers, and disadvantaged Year 10 pupils (DfE, 2020b; 2020c). Due to a range of technical and operational difficulties schools have, to date, found it difficult to access this support, and the Secretary of State for Education has since confirmed that he expects the majority of laptops not to be available until later in June (EPI, 2020). Many senior leaders in our survey indicate that they intend to access these resources in future, demonstrating a high level of perceived need. Over four-fifths (81 per cent) of senior leaders in secondary schools intend to access digital devices, and 63 per cent intend to access 4G hotspot devices. Given that high-quality remote teaching and learning cannot be achieved without access to digital technology, it is critical that support is made available to the most disadvantaged pupils in all year groups – not just those in Year 10 – as soon as possible.

²⁷ According to senior leaders, the proportion of pupils with little or no IT access is 36 per cent in schools in the highest FSM quintile, compared to 14 per cent in schools in the lowest FSM quintile.

The level of contact between teacher and pupil

The higher the level of school deprivation, the less likely teachers are to be in regular contact with their pupils. Teachers in the most deprived and second most deprived schools are, on average, in regular contact with 50 per cent and 56 per cent of their pupils respectively, whereas teachers in the least deprived schools are in contact with 67 per cent of their pupils. This indicates that, on average, half of pupils in the most deprived schools currently have no regular contact with their teacher. This has worrying implications for the potential longer-term impact on their learning and well-being.

Guidance and support provided to teachers by school senior leaders

Senior leaders in the most deprived schools are significantly less likely than those in the least deprived schools to be providing guidance to teachers on whether they should be providing feedback to pupils on submitted work (81 compared to 92 per cent). However, teachers working in the most deprived schools are significantly more likely than those working in the least deprived schools to say that the level of support from their school to help them engage with their pupils is good or very good (83 compared to 73 per cent). This is surprising given the previous finding.

The Government's 'EdTech Demonstrator Programme' (DfE, 2020b) is intended to help schools to get support from schools and colleges which are already using remote education technology. However, very few senior leaders intend to access this support. Sixty per cent of senior leaders in the most deprived schools say they do not intend to access the programme, with 35 per cent being unsure and only five per cent saying that they will access it. Among senior leaders in the least deprived schools, 76 per cent do not intend to access the resource, 22 per cent are unsure and only two per cent say they will access it. This is concerning when we consider that across the UK as a whole, only just over 40 per cent of disadvantaged schools agree that their school has an effective online learning support platform available, compared to over 70 per cent of more advantaged schools (Reimers and Schleicher, 2020). The DfE may need to do more to promote the benefits of this support programme to schools, particularly those with high proportions of disadvantaged pupils. A key group to target could be senior leaders from the most deprived schools who say they are not sure if they will access the programme.

Curriculum coverage

Teachers giving less attention to all areas of the curriculum are likely to have six percentage point lower levels of pupil engagement than teachers covering the curriculum as normal. The most deprived schools are struggling most in terms of their ability to cover the curriculum.

It is concerning to find that teachers in the most deprived schools are significantly more likely than teachers in the least deprived schools to say that all areas of the curriculum are currently getting less attention than usual (34 compared to 22 per cent).

Findings related to phase and school type

Academies are likely to have slightly higher levels of pupil engagement than maintained schools.

Our model found that academies are associated with a four percentage point increase in pupil engagement compared to maintained schools. It did not, however, find a significant relationship between phase and engagement, once subject and age group taught were taken into account. However, there are other differences between primary and secondary schools as set out below.

The proportion of pupils returning set work

Secondary teachers are significantly more likely to report that their pupils are returning set work than primary teachers (46 compared to 41 per cent of pupils). However, secondary teachers are also more likely to report that this is *lower* than the proportion of pupils returning work prior to schools closing. This reflects the fact that, in normal circumstances, there is a higher expectation for secondary-aged pupils to work independently outside of school hours and to submit homework for assessment by their teacher.

Parental engagement

Not surprisingly, the engagement of primary school parents is significantly higher (56 per cent) than that of secondary school parents (48 per cent). This is likely to be influenced by the age of the pupils. Parents of secondary school pupils may feel that they do not need to be directly engaged because they expect their children to be able to manage their own learning. The secondary curriculum is also more complex for parents to understand, so they are less likely to be able to help their children directly. The parents of secondary-aged

pupils still have an important role to play, however, in encouraging their children to engage with their learning, and by helping to provide a good environment for their children to learn.

Pupil access to IT resources

Secondary senior leaders are significantly more likely to report having pupils with little or no access to IT than primary leaders (96 per cent compared to 84 per cent). Similarly, 85 per cent of secondary teachers report having pupils with these challenges compared to 73 per cent of primary teachers. This suggests that the impact of having little or no IT access is particularly affecting older pupils, possibly due to the comparative complexity of their work, the variety of subjects covered in the secondary curriculum, and a need for more frequent access. Secondary learning materials may be more reliant on access to appropriate IT, whereas primary teachers may be able to more readily incorporate paper-based or practical activities into their provision for remote learning.

Engagement among disadvantaged pupil groups

Teachers from secondary schools consistently report that all their disadvantaged pupils²⁸ are less engaged than do teachers from primary schools. The difference ranges from seven percentage points in relation to vulnerable pupils (68 compared to 61 per cent) to 20 percentage points for young carers (63 compared to 44 per cent). For pupils with limited IT access and/or space to study at home, primary teachers report that 80 per cent of these pupils are less engaged than their classmates, compared to 89 per cent of pupils reported by secondary teachers. Secondary teachers are facing more specific challenges in motivating these groups of pupils to learn, compared to their classmates. This may be because secondary pupils are far less likely to have parental supervision and, without this, these particular groups may be more likely to lose motivation compared to their classmates than primary pupils. For pupils in Years 11 and 13, this may also be related to the cancellation of national examinations such as GCSEs and A levels.

The level of contact between teacher and pupil

Primary school teachers (62 per cent) are in contact with a significantly higher proportion of pupils, on

average, than secondary school teachers (50 per cent). This difference is likely to be due to the type of contact teachers are having with their pupils. Primary school teachers may have more of a focus on 'touching base' with pupils and parents and less of a focus on formal provision of learning compared to secondary school teachers. Secondary teachers will also be attempting to remain in contact with many pupils across multiple classes within and across year groups, rather than with a single class of pupils

Guidance provided to teachers by school senior leaders

Secondary leaders are significantly more likely than primary leaders to be providing guidance on the *amount* of work to set (98 compared to 89 per cent), and on the amount of work that pupils should be *submitting* (83 compared to 63 per cent). They are also more likely than primary leaders to want pupils to provide some information about what they have been working on at home or to submit their work. Over four-fifths (84 per cent) of secondary leaders say that they 'expect pupils to submit work or confirm to teachers that they have attempted it', while only 53 per cent of primary leaders 'expect pupils (or their parents) to let teachers know what they have done'.

Similarly, senior leaders in academy schools are significantly more likely than those in maintained schools to be guiding their staff on the *amount* of work to set (93 compared to 88 per cent), and on *whether* to provide *feedback* to pupils (87 compared to 83 per cent). Where we have found significant differences between primary and secondary schools, there may be similar differences between maintained and academy schools. This reflects the fact that there is considerable overlap between phase and school type, as the majority of primary schools in England are LA-maintained (68 per cent) and the majority of secondary schools are academies (75 per cent)²⁹ (DfE, 2019).

Teachers' ability to support remote learning

Secondary teachers are significantly more likely than primary teachers to say that the hardware/equipment provided by their school is very poor or poor (21 compared to 13 per cent). This may reflect a greater expectation among secondary teachers that IT equipment is a fundamental requirement of their job. Given that the pandemic is likely to continue to require

28 Vulnerable pupils (those with an Education Health and Care Plan (EHCP), a social worker, or identified as vulnerable), pupils eligible for Pupil Premium funding, pupils with SEND that do not have an EHCP, young carers, and pupils who have limited access to IT and/or space to study at home.

29 This figure includes free schools, university technical colleges, and studio schools.

higher levels of remote teaching for a considerable period, schools and government should ensure that appropriate equipment and training is available to teachers, who require a good standard of equipment to ensure that the quality of their teaching and learning is comparable with other countries, and to protect the quality of education delivered to pupils (Reimers and Schleicher, 2020).

Curriculum coverage

The reduction in curriculum coverage is most pronounced in primary schools, with primary teachers significantly more likely to state that some or all areas of the curriculum are getting less attention than secondary teachers (83 compared to 61 per cent). Maintained schools (28 per cent) are also significantly more likely than academy schools (22 per cent) to say that all areas of the curriculum are gaining less attention than usual.

Findings related to region

Teachers in the West Midlands are likely to have lower pupil engagement.

Our model found that schools based in the West Midlands have an eight percentage point lower level of pupil engagement compared to schools in London, after accounting for other factors. This is reflected in the

Academies are likely to have slightly higher levels of pupil engagement than maintained schools.

proportion of pupils that teachers say are returning set work in this region (36 per cent) compared to the East of England (44 per cent), South West (44 per cent), South East (45 per cent) and London (45 per cent).

There is also evidence of significant regional differences in other factors related to engagement³⁰.

Parental engagement

Overall, the northern regions of England tend to have lower levels of parental engagement than the South and East of England (not including London). For example:

- Yorkshire and the Humber (50 per cent) has lower engagement than the East Midlands (58 per cent), South West (59 per cent) and South East (59 per cent).
- The North West (52 per cent) has lower engagement than the South West (59 per cent) and the South East (59 per cent).

Yorkshire and the Humber and the North West both have relatively high levels of deprivation, which may explain some of these differences (see, for example, Dunatchik *et al.*, 2018; Northern Powerhouse Partnership, 2018; Hutchinson *et al.*, 2018).

Pupils' access to IT resources

In the South East, South West, and East of England, teachers report that the proportion of pupils with a lack of IT is between 24 and 25 per cent, on average. This compares to 31 per cent in the North West. These differences may be linked to regional disadvantage, though the absence of a significant difference between these regions and Yorkshire and Humber suggests there are other factors explaining these regional variations.

Guidance provided to teachers by school senior leaders

Senior leaders in Yorkshire and the Humber are significantly less likely than those in London and the South East to be advising their staff on the *amount* of work to *set* (79 compared to over 90 per cent), while senior leaders in the North West are significantly less likely than those in London to be advising their staff on the amount of work that pupils should be *submitting* (57 compared to 79 per cent). As mentioned earlier, the former are regions with high levels of deprivation, though London can also be considered relatively deprived.

³⁰ As the number of responses from the North East is very small, results for this region are not included in these analyses.

School and teacher contextual factors related to pupil engagement

School contextual factors

Schools with low prior attainment and schools which experienced a significant drop in the numbers of pupils attending prior to 20 March are likely to have lower levels of engagement.

Our model found that schools in the lowest attainment group have a six percentage point decrease in engagement, while those in the second lowest attainment group are associated with a five percentage point decrease in engagement, relative to schools in the middle quintile.

We also found that the impact of Covid-19 prior to schools closing to most pupils was an important factor in accounting for differences in pupil engagement, after controlling for other factors. Schools which experienced a significant drop in the numbers of pupils attending prior to 20 March were associated with a five percentage point decrease in pupil engagement. This suggests that a loss of momentum in teaching prior to 20 March has a longer-term impact on pupils' engagement during their subsequent period of home learning.

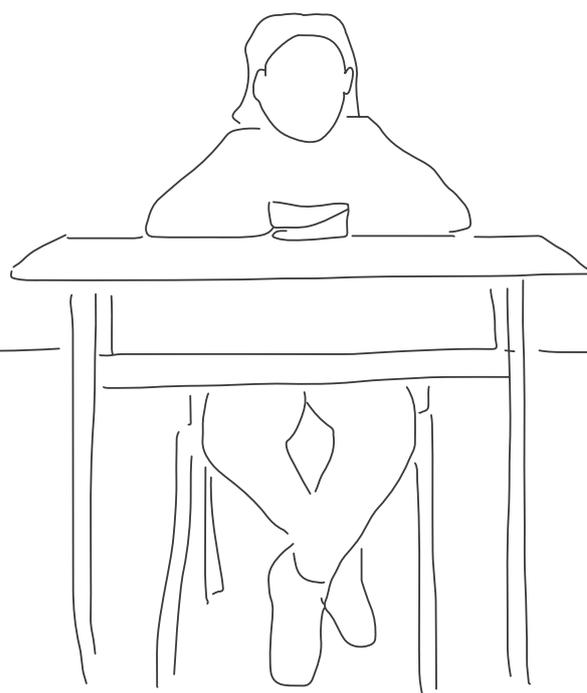


Teacher contextual factors

Teachers aged between 20 and 29 are likely to have lower pupil engagement and a lower likelihood of their disadvantaged pupils being highly engaged. Teachers who feel well-supported by their school, and teachers who teach Key Stage 5, are likely to have higher levels of pupil engagement, while teachers with a good quality working environment at home have a seven percentage point increase in the likelihood of their disadvantaged pupils being highly engaged.

Our model shows that teachers aged between 20 and 29 are associated with a five percentage point decrease in general pupil engagement, and a 13 percentage point decrease in the likelihood of their disadvantaged pupils being highly engaged. This is likely to be related to their comparative inexperience and a possible lack of confidence. Teachers who feel well-supported by their schools report four percentage point higher levels of pupil engagement than those who do not. In light of these findings, senior leaders may wish to consider how they can support their young and comparatively inexperienced teachers, including through the provision of targeted CPD.

Teachers working with Key Stage 5 pupils have four percentage point higher levels of pupil engagement. This is likely to be due to the greater ability of these pupils to engage in remote learning independently. These older pupils may also be more motivated to engage in remote learning.



The nature of remote learning support provided by schools

A number of factors related to the nature of remote learning support are significantly associated with the engagement of pupils in general and disadvantaged pupils in particular.

Delivering remote learning to pupils: method of notification

Schools using a virtual learning environment (VLE) to inform pupils about learning activities have an eight percentage point higher general pupil engagement level than schools not using VLEs, and a 13 percentage point increase in the probability of having highly engaged disadvantaged pupils.

In contrast, schools that use their website to inform pupils about learning activities have a five percentage point lower level of pupil engagement, and an eight percentage point decrease in the likelihood of disadvantaged pupils being highly engaged, compared to schools that do not use their website for this purpose.

Our general pupil engagement model also found that schools using telephone or video calls to inform pupils about learning activities have three percentage point higher levels of pupil engagement, relative to schools that do not use these methods³¹.

While VLEs and telephone or video calls are positively associated with pupil engagement, they are only used by 52 per cent and 69 per cent of senior leaders respectively. On the other hand, 80 per cent of schools use their website, which is negatively associated with engagement.

Overall, the most common method used by schools is emails and texts. Senior leaders are also frequently using labour-intensive or traditional methods to notify pupils and parents about work, including delivering materials in person to pupils' home addresses and postal services.

Differences by disadvantage

Senior leaders in the most deprived schools are significantly more likely than those in the least deprived

Table 3: The extent to which schools are using different tools to inform pupils/parents about remote learning activities

Tools used to inform pupils/parents	Senior leaders (%)
Emails/texts	86
The school's website	80
Telephone/video calls home	69
The school virtual learning environment (VLE)	52
Staff deliveries/visits to pupils' homes	47
Postal services	26
Other	18

Source: NFER survey of 1233 senior leaders: 1230 senior leaders gave a least one response.

³¹ This may reflect other factors driving both the likelihood of schools having access to these resources and levels of pupil engagement, which we have been unable to control for in our modelling.

schools to be using the school website as a method of notification (85 per cent compared to 73 per cent). Labour-intensive methods are also a particular feature of communication in the most deprived schools, which is likely to reflect the fact that larger proportions of their pupils have limited access to IT resources at home. Senior leaders in the most deprived schools are significantly more likely than those in the least deprived schools to be:

- making telephone or video calls with pupils (74 per cent compared to 60 per cent); although this is a labour-intensive strategy, it is positively associated with pupil engagement
- delivering to, or visiting, pupils' homes (55 per cent compared to 35 per cent)
- using postal services (33 per cent compared to 17 per cent).

Differences by phase and school type

Secondary leaders are significantly more likely to say that they use a VLE as a method of notification than primary schools (71 per cent compared to 48 per cent). Academy schools are also significantly more likely to use this method of notification than maintained schools (60 per cent compared to 47 per cent)³². This finding aligns with a recent OECD study, which found that approximately two-thirds of schools in the UK had an 'effective online learning support platform' for the 15-year-old age group in 2018; slightly higher than the OECD average (Reimers and Schleicher, 2020).

On 19th April, the Government announced that it would be providing support for schools to set up online educational platforms through 'The Key for School Leaders' (DfE, 2020b; 2020c). Based on our findings, take-up of this offer is currently low, with only ten per cent of senior leaders in our survey saying that they intend to take advantage of this. Primary leaders are significantly more likely to say that they will *not* take up this offer (64 per cent) than secondary leaders (43 per cent). Given that primary leaders' schools are already less likely to be using VLEs, and are less likely to report that their pupils have challenges with IT, the Government may wish to put additional resource into promoting this offer, and its benefits, to primary schools.

Postal services are significantly more likely to be mentioned as a means of communicating with pupils by secondary leaders than primary leaders (47 per cent compared to 22 per cent), and by leaders in academy schools than by leaders in maintained schools (32 per

cent compared to 22 per cent). This finding reflects the fact that secondary school populations are drawn from a larger geographical area than primary populations, and that coordinating hand delivery or collection of materials from school is therefore likely to be more difficult for secondary schools.

Delivering remote learning to pupils: teaching and learning approaches

Schools delivering learning content to pupils through online conversations, have higher general pupil engagement levels (five percentage points) and an increased probability of having highly engaged disadvantaged pupils (eight percentage points).

Teachers who set activities that involve consolidating previous learning or revising have a five percentage point higher level of engagement. These types of learning activity also increase the likelihood of disadvantaged pupils being highly engaged by six percentage points.

Senior leaders report that their schools are most likely to be delivering learning by using materials produced by external providers, such as educational websites or apps (92 per cent), or online resources such as pre-recorded video lessons (90 per cent). Where schools are providing their own resources, these are generally workbooks, or worksheets (80 per cent). Less than half (44 per cent) of leaders' responses relate to teachers producing their own pre-recorded lessons for sharing with pupils, and only a minority say that their schools are using active forms of teaching and learning led by the pupils' own teachers, such as live remote lessons (14 per cent) or online conversations (37 per cent). Limited pupil access to IT resources, especially in schools with high levels of deprivation, appears to be limiting teachers' pedagogical options.

Table 4 shows the variety of learning activities that teachers say they are providing for pupils.

The most common activities identified by teachers are: watching recorded content; carrying out project work or independent study; reading a book; or completing a worksheet or working from a text book. Only about a quarter of teachers are asking pupils to listen to or watch them present content in a live session (a slightly higher proportion than suggested by senior leaders). Safeguarding is a major consideration for schools as

32 But it is important to note that secondary schools are more likely to be academies and primary schools more likely to be LA maintained schools. As a result, any apparent differences between academy and maintained schools may be driven by school phase.

Table 4: The most recent learning activities teachers provided to their pupils

Learning activity	Teachers (%)
Access recorded content (e.g. video clips or programmes)	64
Undertake project work, research or independent study	58
Read a book	57
Complete a worksheet or do work from a text book	57
Consolidate previous learning or revise (including completing past test/exam papers)	48
Listen to/watch you or another teacher present content in a live session	24
Learn about strategies for managing their own learning	8
Work collaboratively with you (e.g. via an online session)	6
Undertake coursework	5
Work collaboratively with other pupils (e.g. via a facilitated online session)	3

Source: NFER survey of 1821 teachers: 1741 teachers gave at least one response.

they contemplate the logistics of live learning or online discussions (EEF, 2020b).

One development prompted by the pandemic is the establishment of the [Oak National Academy](#), which aims to provide quality teaching resources for pupils across phases and subject areas where teachers cannot make provision for interaction with their own pupils. Over half (59 per cent) of senior leaders we surveyed say they are intending to use the Oak National Academy’s teaching and learning resources in future.

At this stage, very few teachers are teaching explicit metacognitive strategies or undertaking collaborative pupil-teacher work or peer learning. These approaches are identified by the EEF (EEF, 2020b) as evidence-based strategies for remote learning. The EEF state that:

1. **The quality of teaching is more important than the method of delivery.** It is possible to maintain good pedagogical practice remotely, for example, through clear explanation, scaffolding and feedback. There is no clear benefit to live, over pre-recorded, teaching, provided that good pedagogy is demonstrated.

- 2. **Access to digital technology is critical, especially for disadvantaged pupils.** Effective remote learning without digital access will be challenging.
- 3. **Peer interactions can boost motivation and improve learning outcomes**, especially for older pupils, for example, through peer marking; sharing work; or live discussion.
- 4. **Supporting pupils to work independently can improve learning outcomes**, especially for disadvantaged pupils, for example, by providing explicit support on self-regulation.

Although these strategies are not yet common, almost half (48 per cent) of teachers are asking pupils to consolidate their learning or to revise, a strategy that is associated with increased pupil engagement. As a learning approach, this is likely to require a high level of pupil self-regulation if it is to result in effective learning and good progress, so schools may wish to consider the EEF guidance on supporting pupils to work independently, in conjunction with this approach.

In an open question, senior leaders and teachers were asked what approaches they were using that they thought were effective for providing remote learning and why. By far the most common approach that senior leaders find effective is direct communication between teachers, pupils and parents³³. Many senior leaders and their staff are telephoning pupils on a weekly basis, or are sending personal emails. Other approaches include:

- using VLEs/online learning platforms to provide work
- using a varied approach consisting of different activities and resources (including practical, non-academic activities)
- using resources teachers have created such as videos, podcasts, presentations, and guides to home learning
- sharing examples of pupils' and teachers' work and/or experiences with the school community.

Senior leaders find these strategies effective for two main reasons. First, they enable teachers to recognise pupils' and parents' efforts and celebrate their successes, which is motivating and maintains a sense of the school community. Second, they allow staff to help, support and guide pupils and parents through the work or learning activities they have provided.

'Publishing work of other children with positive comments means others are keen for their work to be celebrated too and gain recognition from their teacher.'

'Specific students with named teaching assistants making regular contact (at least twice per week) with students and their families to support/guide/encourage appropriate work. This ensures those who need the support and encouragement the most get it.'

Teachers are using a wide range of online resources that they feel are effective at engaging pupils in remote learning³⁴. These include VLEs, subject-specific learning resources, communication tools and platforms, and other learning platforms that are relevant to multiple key stages and/or subjects. The individual resource most commonly cited by teachers overall is BBC learning content (including Bitesize). Maths appears to be the key subject area in which teachers are most likely to draw on subject-specific websites and

online resources. The most frequently reported maths resource is White Rose Maths, followed by TimesTable Rockstars and MyMaths. Collectively, maths-specialist tools are mentioned the most by teachers. Literacy-specific tools are also popular, with examples including Oxford Owl, Read Write Inc. Phonics, and Hamilton Trust literacy home learning units.

Teachers are also sourcing online resources created by other teachers to share with their pupils, while some are producing their own online resources such as self-made videos and blogs.

The most common reasons given by teachers as to why these resources are effective are:

- pupils are familiar with the tool, approach and/or resource
- teachers are able to provide work easily (including delivering live lessons)
- pupils and parents find the resource interesting and engaging
- the resource offers a wide range of content
- teachers find it easy to link the resource to the curriculum, a scheme of learning, and/or range of year groups.

Teachers do not report that they have selected these approaches because they have a strong evidence base about efficacy in improving pupil outcomes.

Use of teaching assistants

In another open question, we asked senior leaders and teachers how they have been deploying teaching assistants (TAs) to help their school to function during the Covid-19 pandemic and, as shown in Table 5, they are being used in a variety of ways. Many schools are using TAs to support vulnerable and disadvantaged pupils (and their parents), both in-school and remotely - by calling them at home for welfare checks. Some schools have online learning platforms that TAs can access from home. This has enabled them to provide learning support for pupils as well as take part in staff meetings. The kinds of support TAs are providing include recording stories for children, setting tasks, adapting tasks for pupils with SEND, checking pupils have completed their work, providing feedback, and marking.

33 866 senior leaders responded to this question.

34 1359 teachers responded to this question.

Teaching assistants who are able to work outside the home are also performing key administrative tasks such as preparing work packs to be posted to pupils' homes.

'Those working remotely have been providing real-time marking and feedback to students, phoning vulnerable students, and offering bespoke support to those with an EHCP, making resources, doing CPD.'

'TAs are part of online learning provision - responding to pupils' work and posting learning support videos for identified children who may be struggling with some content.'

Differences by disadvantage

Senior leaders in the most deprived schools are significantly less likely than those in the least deprived schools to say that their teachers are providing live remote lessons for pupils (seven, compared to 15 per cent). Similarly, senior leaders in the most deprived schools are significantly less likely than those in the least deprived schools to say that their teachers are having online conversations with their pupils (30 compared to 42 per cent) or pre-recording video lessons for pupils (3, compared to 51 per cent). They are also significantly more likely to say that they are using workbooks, sheets or resources (86 compared to

74 per cent). This is likely to reflect the fact that more pupils in these schools have limited access to digital resources. It is a considerable challenge for schools to engage their most disadvantaged pupils in the current climate.

These findings align with those of the IFS parent survey (Andrew *et al.*, 2020) and a survey of teachers by the Sutton Trust (Cullinane and Montacute, 2020), which find that pupils from the richest households are being offered active help from schools, such as online tutoring, more frequently than pupils from the poorest households.

Differences by phase and school type

Secondary leaders are significantly more likely than primary leaders to say that their teachers are providing live remote lessons (33 per cent compared to ten per cent), having online conversations with their pupils (46 per cent compared to 35 per cent), and pre-recording video lessons for pupils (55 per cent compared to 42 per cent). These patterns are mirrored in differences between academy and maintained schools. They also align with those from a survey of parents (Andrew *et al.*, 2020) in which parents reported that secondary-age pupils were more likely to be having online lessons than primary-age pupils. Primary leaders are significantly more likely than secondary leaders to say that they are using educational websites or apps (92 per cent compared to 88 per cent), suggesting that they are more likely to draw on the support of third parties.

Table 5: Use of teaching assistants

How have you deployed/used teaching assistants to help you manage the current situation?	Senior leaders (%)	Teachers (%)
Working in school (in general)	41	19
Supporting keyworker children (in school)	20	27
Training at home	17	8
Supporting vulnerable children (in school)	16	9
Preparing resources and learning activities	12	7
Supporting pupils and parents remotely	10	10
I have not used TAs/none are available	3	12

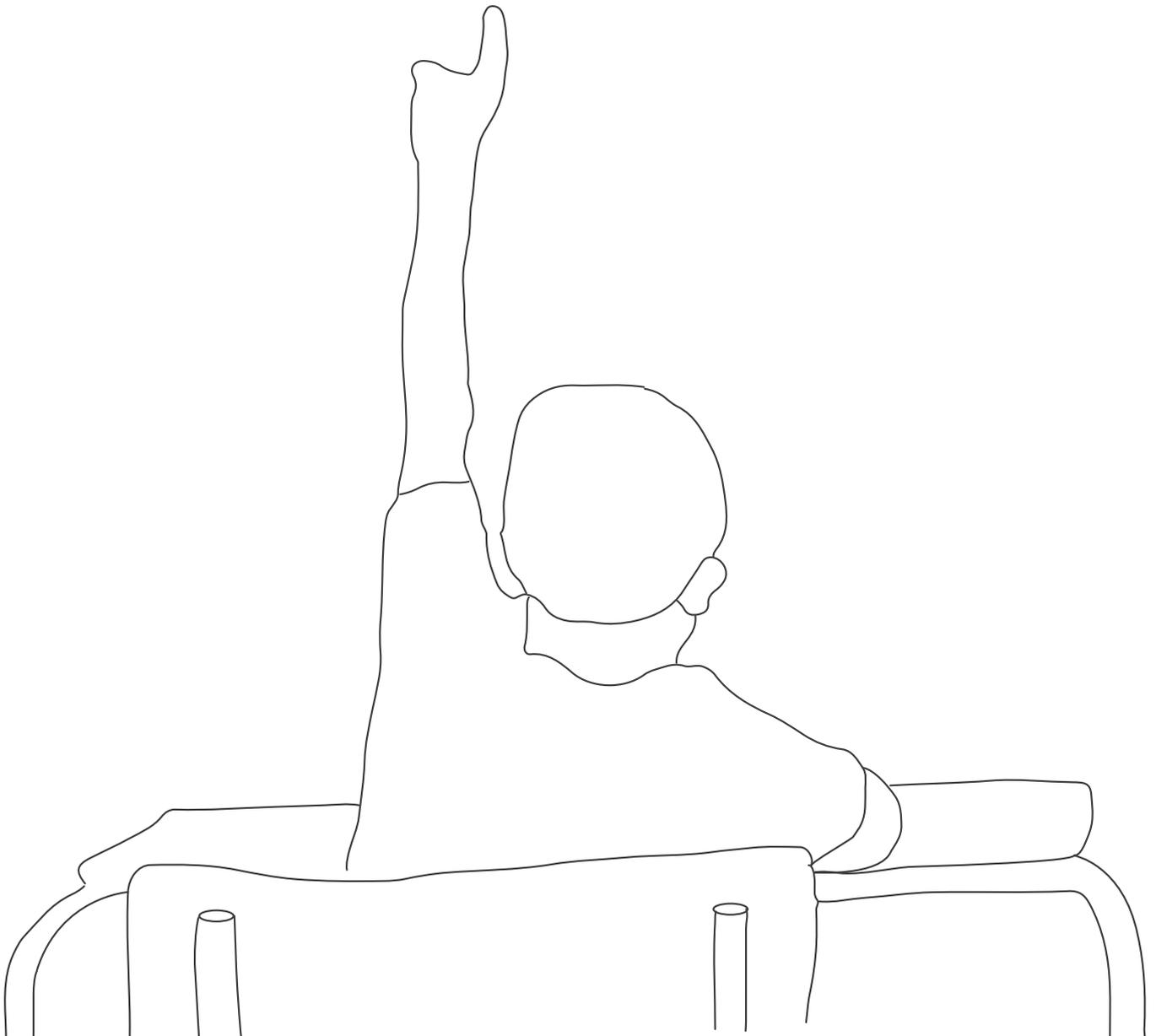
An open-ended question with multiple responses.

Source: NFER survey of 1233 senior leaders and 1821 teachers: 904 leaders and 1363 teachers gave at least one response.

Differences by region

There are some differences in experience between schools in the northern and southern regions of England. Senior leaders in the North West are significantly less likely than those in the South East, East of England, London or the West Midlands to say that their teachers are pre-recording video lessons for pupils (28 compared to a range from 48 to 53 per cent). Similarly, senior leaders in Yorkshire and the Humber are significantly less likely than those in the South East to be having online conversations with pupils (25 compared to 44 per cent). It is likely that these findings reflect the relative deprivation levels in these regions, apart from London, and the extent of pupil access (or lack of access) to digital technology (Northern Powerhouse Partnership, 2018; Hutchinson *et al.*, 2018).

Schools delivering learning content to pupils through online conversations, have higher general pupil engagement levels



Discussion and conclusion

This research has provided an in-depth analysis of the challenges schools are facing in delivering effective remote learning during this period. Most teachers (90 per cent) say that their pupils are doing less work than they would usually expect at this time of year. This reflects a mix of school- and home-based factors, including a substantial deficit in curriculum coverage, relatively low levels of parental engagement with home learning, and limited pupil access to IT at home. Approximately a quarter of pupils in schools in England have little or no IT access at home, and few senior leaders say that their schools are using active forms of teaching led by the pupils' own teachers, such as live remote lessons (14 per cent) or online conversations between pupils and teachers (37 per cent).

The research suggests that disadvantaged pupils are half as likely to be engaging in learning activities, and that pupils who would normally attend the most deprived schools are less likely to be engaged than those who would normally attend the most affluent schools. This is deeply concerning, given the implications it has for their futures and for the attainment gap. A rapid evidence review by the Education Endowment Foundation (EEF, 2020a) suggests that the past decade's progress in closing the gap is likely to be reversed as a result of the Covid-19 pandemic.

Implications for government, academy trusts and local authorities

Thus far, the Government has prioritised six year groups for a return to school in June because they are at key transition points in their education (DfE, 2020d; 2020e). However, our research suggests that it is also critical to get disadvantaged pupils, pupils in the most disadvantaged schools, and pupils with little or limited access to IT at home, back to school as soon as it is safe to do so.

Through the ongoing period of remote learning, it will be vital to enable disadvantaged pupils to access digital devices in order to avoid any accumulation in disengagement, which would serve to widen the attainment gap still further. There is a strong case for extending the Government's scheme to fund digital provision for disadvantaged Year 10 and vulnerable pupils (DfE, 2020b; 2020c) to other year groups, and to all young people who have no access to IT at home, to ensure that they can access and undertake set work. In

the absence of getting digital devices to disadvantaged pupils, schools serving deprived populations or supporting disadvantaged pupils are likely to need additional support to enable them to maintain contact and interaction with the pupils they serve.

On average, pupils in primary schools are less engaged in remote learning than pupils in secondary schools in terms of returning set work, although leaders say that 71 per cent of primary pupils are, nevertheless, getting involved in learning activities. They are also more likely to have support from their parents and contact from their teachers than pupils in secondary schools. However, secondary schools are more likely to be covering the full curriculum than primaries, and to be using teaching and learning approaches associated with positive pupil engagement, such as setting work through VLEs, and undertaking 'active' forms of teaching.

There is a very real concern that, with Nursery, Reception, Year 1 and Year 6 pupils starting to return to school across split classes, primary schools will have very limited teaching capacity to maintain high-quality remote learning support for pupils in Years 2-5 (Sharp *et al.*, 2020). This highlights the fact that primary and secondary schools are facing different challenges, so guidance and support needs to be tailored to address their different needs. Government, Trusts and LAs will need to explore how schools can give sufficient attention to on-going remote learning for primary pupils alongside their in-school provision. Similar support is likely to be needed for secondary schools, as pupils in Year 10 and 12 begin to spend more time in school with their teachers.

Given the positive link between pupil engagement and schools' use of VLE's, there is a need to promote the benefits of these platforms to schools, to increase the number of schools using VLEs, and to support schools to implement them. Government, Trusts, LAs and senior leaders also need to ensure that teachers have access to sufficient training and equipment to enable them to deliver effective remote learning support and to use technology effectively.

Further investigation is needed to understand several of the issues highlighted in this report. These include the challenge of engaging and supporting pupils with SEND (whom our research has found to be disadvantaged to a comparable degree to vulnerable pupils and pupils in receipt of Pupil Premium funding); and the reasons why so few senior leaders (just 10 per cent and 3 per cent respectively) are considering utilising the 'EdTech

Demonstrator Programme' or 'The Key for School Leaders' support for educational platforms', which are aspects of the Government's support offer.

Implications for senior leaders

As curriculum coverage is positively associated with pupil engagement, it is important for schools to work towards restoring the curriculum for pupils who are still based at home, via remote teaching and learning. Of course, this will be particularly challenging during a period when schools are dealing with a mixed diet of in-school and remote learning provision. Senior leaders will need to decide how to deploy staff, including TAs, who are not able to work on the school site (because they are shielding, vulnerable or self-isolating) to support efforts to broaden curriculum focus and support effective ongoing remote learning.

The positive association between teachers feeling well-supported by their senior leaders and pupil engagement reinforces the vital role of leaders in this situation. Senior leaders should continue providing this support for all staff, but they may also wish to put additional support in place for younger staff, who are comparatively inexperienced and may lack confidence, providing them with additional CPD on effective strategies for remote teaching. Governors, local authorities and Trusts also need to ensure that leaders themselves have access to support for their role.

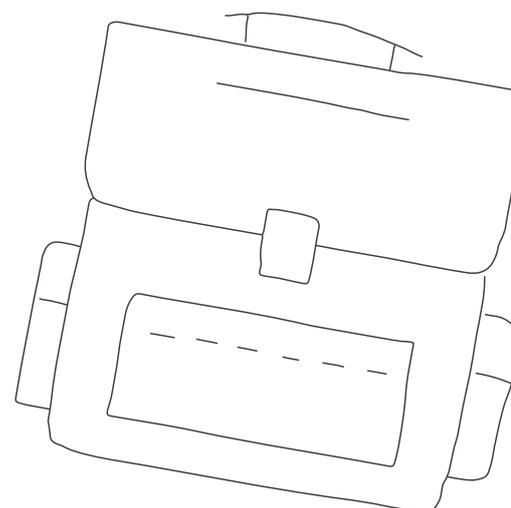
While resources are tight, it is important that schools focus on the most effective means of supporting pupils' learning, for example, focusing on how to achieve high-quality *teaching* (with or without interactive delivery methods), as opposed to ensuring that there is a flow of set work. Schools may also wish to consider developing 'active' forms of teaching and learning, which have a positive association with pupil engagement. These include: telephone calls, video calls, the use of VLEs, and online conversations between teachers and pupils.

Consolidation of learning and revision activities also have a positive relationship with engagement. Guidance from the EEF on remote learning (2020b) highlights that it is important to couple these activities with explicit guidance for pupils on how to manage their own learning and work independently. Teaching assistants can be deployed to support these activities.

Teachers have also pointed to a number of approaches that they have found helpful in supporting remote learning. These approaches may not, however, have a strong evidence base in terms of their effectiveness and should be reviewed carefully before being adopted by more schools.

This research suggests that just over half of parents are supporting their children's learning. Schools have an important role to play in helping parents, particularly where they have few resources and find it difficult to support their child(ren)'s learning (Drayton, 2020). Building on the work by the EEF (EEF, 2019), this could include suggesting ways in which parents can help their children to manage their learning, while motivating their children and praising their efforts. As well as increasing parental engagement, this will help to maintain the school community, despite the disruptive effects of Covid-19.

As more pupils begin to return to schools, there is also an opportunity for teachers to start the process of re-engaging pupils who have not been participating in remote learning, and assessing where their learning has fallen behind. As schools look to the future and plan for the continuation and/or possible new waves of remote learning, they will be able to draw on the lessons that they have learned over recent months. By building this knowledge into their planning, schools can work proactively to smooth the transition into different combinations of remote and face-to-face provision and keep pupils learning.



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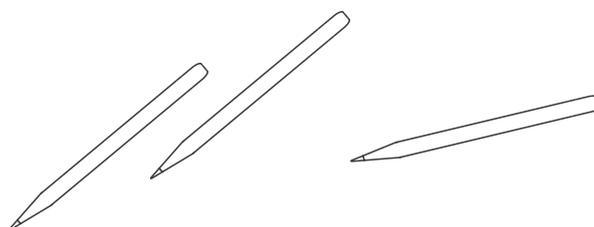
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Appendix 1

We estimated a statistical model, using a weighted Ordinary Least Squares (OLS) regression, to examine the association between different variables and pupil engagement. Pupil engagement was measured based on the share of pupils who returned their last piece of set work to their teachers.

The table shows all the variables that were included in the final model. Answers to other questions in the survey that were not significant in the model were removed one at a time, until all remaining survey variables were related to the outcome. We also tested controls for whether the school is in a rural or urban location and for the timing of when teachers answered the survey, but these were excluded as they were unrelated to the outcome variable.

Model 1: Model of factors related to pupil engagement

Variables		Unstandardised coefficient	Standard error	Standardised coefficient	Level of significance
Ofsted Rating 2019	Outstanding	-0.052	2.391	-0.001	0.983
	Requires improvement or inadequate	0.087	2.159	0.001	0.968
Phase	Secondary school	-1.642	4.354	-0.026	0.706
Attainment Quintiles	Lowest 20%	-5.738	2.562	-0.090	0.025
	2nd Lowest 20%	-4.861	2.407	-0.074	0.044
	2nd Highest 20%	-1.701	2.603	-0.026	0.514
	Highest 20%	2.647	2.844	0.038	0.352
Free School Meal Quintiles	Lowest 20%	-0.092	2.598	-0.001	0.972
	2nd Lowest 20%	-1.673	2.543	-0.025	0.511
	2nd Highest 20%	-4.278	2.366	-0.066	0.071
	Highest 20%	-13.086	2.421	-0.199	0.000
Region	East Midlands	-2.442	3.574	-0.032	0.495
	East of England	-1.239	3.380	-0.017	0.714
	North East	-5.233	4.078	-0.040	0.200
	North West	-0.373	3.353	-0.005	0.911
	South East	-0.217	3.285	-0.003	0.947
	South West	-0.537	3.430	-0.006	0.876
	West Midlands	-7.844	3.805	-0.081	0.039
	Yorkshire and the Humber	-3.414	3.513	-0.037	0.331
School type	Academy	3.580	1.553	0.069	0.021

Variables		Unstandardised coefficient	Standard error	Standardised coefficient	Level of significance
Which of the following tools is your school currently using to notify pupils and/or their parents about work you are providing/recommending to them?	The school virtual learning environment	8.135	1.760	0.155	0.000
	The school website	-5.043	1.771	-0.088	0.004
	Telephone/video calls home	3.194	1.554	0.061	0.040
	Other	7.118	2.014	0.113	0.000
Which of the following tools is your school currently using to provide learning content to pupils?	Video lessons produced by teachers	3.323	1.871	0.053	0.076
	Teachers having online conversations with pupils	4.507	1.724	0.079	0.009
How would you rate the following in relation to your ability to support pupils to learn remotely? (Good/ Very Good)	Support provided from the school	4.163	1.996	0.068	0.037
	Hardware/equipment provided by the school	3.122	1.777	0.060	0.079
	Access to programmes/ virtual learning environments provided	3.861	2.046	0.069	0.059
Please think about the most recent learning activity you provided for your pupils since 20 March: what did you ask them to do?	Consolidate previous learning or revising most recent activity	5.273	1.484	0.102	0.000
	Learn about strategies for managing their own learning	4.770	2.718	0.054	0.079
Before schools were asked to close to the majority of pupils, those in high-risk medical groups and/ or those displaying symptoms of Covid-19 were asked to self-isolate. What impact did this have on your school?	School experienced significant drop in numbers of pupils pre-schools closing	-4.503	1.582	-0.084	0.004
Are there any areas of the curriculum you normally teach that are getting less attention than usual?	All areas of the curriculum getting less teaching	-5.880	2.528	-0.099	0.020
	Certain areas of the curriculum getting less teaching	-0.748	2.269	-0.014	0.742

	Variables	Unstandardised coefficient	Standard error	Standardised coefficient	Level of significance
Age group	20 - 29 years	-5.254	2.359	-0.067	0.026
	30 - 39 years	-1.062	1.920	-0.019	0.580
	50 - 59 years	-3.822	2.108	-0.058	0.070
	60 + years	4.089	4.523	0.027	0.366
Gender	Female	-0.345	2.027	-0.006	0.865
Key stage	Key Stage 1 or Reception	-3.255	1.867	-0.061	0.081
	Key Stage 3 or Key Stage 4	-1.148	6.671	-0.017	0.863
	Key Stage 5	3.897	1.931	0.043	0.044
Subject	Science and ICT	1.358	6.349	0.010	0.831
	Creative arts and DT	-8.495	6.439	-0.051	0.187
	English	-3.519	6.425	-0.021	0.584
	Humanities	0.428	6.393	0.003	0.947
	Maths	5.827	6.369	0.040	0.360
	Other subjects	-0.531	6.089	-0.004	0.930
Constant	Constant	39.657	5.282	-	0.000

1. Based on NFER survey of 1821 teachers: 1462 are included in the model. The R-squared of the model was 0.25.
2. Reference groups are teachers in the following types of schools: Ofsted = Good, Attainment = middle quintile, FSM = middle quintile, Region = London, Phase = Primary, School type = Maintained Schools, Age = 40-49, Gender = Male, Subject = Not specified, Key stage = 2.
3. Questions with responses of 'To a large/Very large extent' are compared to responses 'To a moderate/Small extent/Not at all/NA'.
4. Questions with responses of 'Moderately/Very/Extremely helpful' are compared to responses 'Not at all/Not very helpful'.
5. Questions with responses of 'Agree/Strongly agree' as compared to responses 'Strongly disagree/Disagree/Mixed views'.
6. Unstandardised coefficients measure the amount that pupil engagement changes when each variable is changed by one unit, while holding all other variables constant. Standardised coefficients measure the amount that pupil engagement changes when each variable is changed by one standard deviation, while holding all other variables constant.
7. Where appropriate, missing data was taken into consideration through the use of dummy variables. The significant ones are not included but are as follows: Ofsted rating, gender, age group, support provided from the school and FSM quintile.

We also estimated a statistical model, using a weighted logistic regression, to examine the association between different variables and the engagement of disadvantaged pupils, where engagement of disadvantaged pupils is measured as a binary variable indicating either 'high' or 'low' pupil engagement. This variable is constructed from the share of schools with high engagement³⁵ who report that their disadvantaged pupils have the same or higher engagement than the rest of their pupils.

The below table presents both estimated coefficients (in terms of log odds) and marginal effects from our model. Marginal effects are provided as they are easy to interpret unlike the estimated coefficients.

They measure the impact of changing a variable by one unit on the probability of pupil engagement for disadvantaged pupils being high for an average teacher³⁶, holding all other factors constant.

The tables show all the variables that were included in the final model. Answers to other questions in the survey that were not significant in the model were removed one at a time, until all remaining survey variables were related to the outcome. We also tested controls for whether the school is in a rural or urban location and for the timing of when teachers answered the survey, but these were excluded as they were unrelated to the outcome variable.

Model 2: Model of factors related to the engagement of disadvantaged pupils (Coefficients)

	Variable	Coefficient (log odds)	Standard error	Level of significance
Ofsted Rating 2019	Outstanding	-0.001	0.227	0.995
	Requires improvement or inadequate	0.134	0.249	0.591
Phase	Secondary school	-0.127	0.556	0.820
Attainment Quintiles	Lowest 20%	-0.239	0.299	0.424
	2nd Lowest 20%	-0.122	0.275	0.657
	2nd Highest 20%	-0.135	0.276	0.624
	Highest 20%	0.343	0.272	0.207
Free School Meal Quintiles	Lowest 20%	0.018	0.260	0.945
	2nd Lowest 20%	-0.386	0.263	0.142
	2nd Highest 20%	-0.367	0.258	0.155
	Highest 20%	-0.734	0.301	0.015

³⁵ Where high engagement is measured by at least 60 per cent of pupils returning the last piece of set work.

³⁶ In this context, an average teacher is not necessarily the most common teacher. Instead, it is defined as a teacher having average characteristics across all the factors included in the model.

	Variable	Coefficient (log odds)	Standard error	Level of significance
Region	East Midlands	-0.227	0.353	0.521
	East of England	-0.296	0.339	0.382
	North East	-0.294	0.486	0.545
	North West	0.094	0.343	0.784
	South East	-0.140	0.322	0.663
	South West	-0.081	0.342	0.813
	West Midlands	-0.168	0.380	0.659
	Yorkshire and the Humber	-0.165	0.355	0.642
School type	Academy	0.398	0.174	0.022
Which of the following tools is your school currently using to notify pupils and/or their parents about work you are providing/recommending to them?	The school virtual learning environment	0.743	0.280	0.008
	The school website	-0.501	0.183	0.006
	Telephone/video calls home	0.308	0.178	0.084
	Other	0.337	0.224	0.134
Which of the following tools is your school currently using to provide learning content to pupils?	Schools providing content using a virtual learning environment	-0.442	0.267	0.097
	Teachers having online conversations with pupils	0.453	0.180	0.012
How would you rate the following in relation to your ability to support pupils to learn remotely? (Good/Very good)	Hardware/equipment provided by the school	0.271	0.178	0.128
	Quality of working environment at home	0.437	0.165	0.008
Before schools were asked to close to the majority of pupils, those in high-risk medical groups and/or those displaying symptoms of Covid-19 were asked to self-isolate. What impact did this have on your school?	School experienced a significant drop in pupils pre-lockdown	-0.253	0.171	0.140

Variable	Coefficient (log odds)	Standard error	Level of significance	
Please think about the most recent learning activity you provided for your pupils since 20 March: what did you ask them to do?	Teacher recently set reading a book as activity	-0.192	0.189	0.311
	Consolidate previous learning or revising most recent activity	0.383	0.165	0.020
	Task set involves collaborative working with other pupils	0.601	0.406	0.139
	Learn about strategies for managing their own learning	0.433	0.245	0.077
Are there any areas of the curriculum you normally teach that are getting less attention than usual?	All areas of the curriculum getting less teaching	-0.376	0.259	0.147
	Certain areas of the curriculum getting less teaching	-0.170	0.218	0.434
Age group	20 - 29 years	-0.786	0.290	0.007
	30 - 39 years	-0.041	0.199	0.838
	50 - 59 years	-0.415	0.241	0.085
	60 + years	0.115	0.471	0.807
Gender	Female	-0.049	0.208	0.813
Key stage	Key Stage 1 or Reception	-0.355	0.218	0.103
	Key Stage 3 or Key Stage 4	-0.498	0.750	0.507
	Key Stage 5	0.368	0.220	0.095
Subject	Science and ICT	-0.377	0.681	0.580
	Creative arts and DT	-0.270	0.706	0.702
	English	-0.266	0.708	0.707
	Humanities	-0.484	0.706	0.493
	Maths	0.239	0.689	0.729
	Other subjects	-0.338	0.662	0.609

1. Based on NFER survey of 1821 teachers: 1399 are included in the model.
2. Reference groups are teachers in the following types of schools: Ofsted = Good, Attainment = middle quintile, FSM = middle quintile, Region = London, Phase = Primary, School type = Maintained Schools, Age = 40-49, Gender = Male, Subject = Not specified, Key stage = 2.
3. Questions with responses of 'To a large/Very large extent' are compared to responses 'To a moderate/Small extent/Not at all/NA'.
4. Questions with responses of 'Moderately/Very/Extremely helpful' are compared to responses 'Not at all/Not very helpful'.
5. Questions with responses of 'Agree/Strongly agree' are compared to responses 'Strongly disagree/Disagree/Mixed views'.
6. Where appropriate, missing data was taken into consideration through the use of dummy variables. The significant ones are not included but are as follows: gender, age group and quality of working environment at home.

Model 2a: Model of factors related to the engagement of disadvantaged pupils (Marginal effect)

	Variable	Coefficient (log odds)	Standard error	Level of significance
Ofsted Rating 2019	Outstanding	-0.000	0.037	0.995
	Requires improvement or inadequate	0.023	0.043	0.6
Phase	Secondary school	-0.021	0.089	0.816
Attainment Quintiles	Lowest 20%	-0.038	0.048	0.421
	2nd Lowest 20%	-0.020	0.045	0.657
	2nd Highest 20%	-0.022	0.045	0.624
	Highest 20%	0.064	0.051	0.208
Free School Meal Quintiles	Lowest 20%	0.004	0.051	0.945
	2nd Lowest 20%	-0.069	0.047	0.141
	2nd Highest 20%	-0.066	0.046	0.153
	Highest 20%	-0.119	0.047	0.011
Region	East Midlands	-0.038	0.06	0.524
	East of England	-0.049	0.057	0.389
	North East	-0.049	0.078	0.531
	North West	0.017	0.063	0.784
	South East	-0.024	0.056	0.666
	South West	-0.014	0.06	0.814
	West Midlands	-0.029	0.065	0.658
	Yorkshire and the Humber	-0.028	0.061	0.643
School type	Academy	0.067	0.03	0.023
Which of the following tools is your school currently using to notify pupils and/or their parents about work you are providing/recommending to them?	The school virtual learning environment	0.125	0.047	0.008
	The school website	-0.084	0.03	0.006
	Telephone/video calls home	0.052	0.03	0.083
	Other	0.056	0.037	0.132
Which of the following tools is your school currently using to provide learning content to pupils?	Schools providing content using a virtual learning environment	-0.074	0.045	0.098
	Teachers having online conversations with pupils	0.076	0.03	0.012

Variable	Coefficient (log odds)	Standard error	Level of significance	
How would you rate the following in relation to your ability to support pupils to learn remotely?	Good hardware/equipment provided by the school	0.046	0.03	0.123
	Good quality of working environment at home	0.073	0.028	0.008
Before schools were asked to close to the majority of pupils, those in high -risk medical groups and/or those displaying symptoms of Covid-19 were asked to self-isolate. What impact did this have on your school?	School experienced a significant drop in pupils pre-lockdown	-0.042	0.029	0.14
Please think about the most recent learning activity you provided for your pupils since 20 March: what did you ask them to do?	Teacher recently set reading a book as activity	-0.032	0.032	0.311
	Consolidate previous learning or revising most recent activity	0.064	0.027	0.019
	Task set involves collaborative working with other pupils	0.101	0.068	0.139
	Learn about strategies for managing their own learning	0.073	0.041	0.076
Are there any areas of the curriculum you normally teach that are getting less attention than usual?	All areas of the curriculum getting less teaching	-0.063	0.045	0.155
	Certain areas of the curriculum getting less teaching	-0.030	0.04	0.446
Age group	20 - 29 years	-0.126	0.042	0.002
	30 - 39 years	-0.008	0.039	0.838
	50 - 59 years	-0.074	0.041	0.073
	60 + years	0.023	0.097	0.811
Gender	Female	-0.008	0.034	0.814
Key stage	Key Stage 1 or Reception	-0.060	0.036	0.1
	Key Stage 3 or Key Stage 4	-0.083	0.126	0.507
	Key Stage 5	0.062	0.037	0.096

	Variable	Coefficient (log odds)	Standard error	Level of significance
Subject	Science and ICT	-0.058	0.097	0.549
	Creative arts and DT	-0.043	0.106	0.686
	English	-0.042	0.107	0.691
	Humanities	-0.072	0.095	0.446
	Maths	0.044	0.132	0.739
	Other subjects	-0.053	0.096	0.585

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5. Questions with responses of 'Agree/Strongly agree' are compared to responses 'Strongly disagree/Disagree/Mixed views'.
6. Where appropriate, missing data was taken into consideration through the use of dummy variables. The significant ones are not included but are as follows: gender, age group and quality of working environment at home.
7. Marginal effects are estimated at means.

Appendix 2

Free school meals (FSM) quintiles were created by identifying the proportion of pupils eligible for free school meals in each school. Based on this, schools were then split into five evenly sized groups known as

quintiles. The quintiles were then included in the pupil engagement model. A similar exercise was used to generate attainment quintiles.

A note on sample weighting

To ensure the sample of respondents was representative of the population of all schools, we created a variable that identifies whether a school is a primary or secondary school and its level of FSM eligibility. FSM information was downloaded from the Department for Education's website in April, and the figure identifying the proportion of pupils eligible for FSM was used to separately create eligibility quintiles for both primary and secondary schools. This created a 13-category variable of sector and quintile, including two missing categories and a single category to indicate all-through schools. The distribution of the responding schools was compared to the population distribution and a chi square test for independence was used to determine if weighting was required.

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