



Impetus

Time well spent?

Examining the impact of the length of the school day on attainment

Policy Briefing 9
October 2021

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Executive summary

Extension of the school day has been a leading policy idea in the debate around recovering from the learning loss and wider educational impacts of the COVID-19 pandemic and was a component in the proposed recovery plan. The most common extension proposed in England is 100 hours per school year – equating to approximately an additional half hour for each school day.

But schools currently have autonomy over the length of their school day and the Department for Education doesn't track how it varies. So, this additional half hour could *technically* already be happening in some schools right now – we just need the data to look into it.

We've conducted a rapid review of a 1% sample of schools to answer two key questions:

- A. whether there is significant variation in the length of the school day across schools
- B. whether this is having an impact on outcomes

Our total sample consisted of 239 schools, of which 114 provided information on their websites about the length of the day, including break times, which we used for our findings. To check that our sample is representative, we compared correlations between attainment and levels of free school meal (FSM) eligibility in the sample and among all schools, with the sample showing a similar if slightly weaker correlation.

There is significant variation in the length of the school day. From our sample, the findings ranged from:

- Six hours to seven hours and forty minutes for length of the average day
- Five hours to six hours and forty-five minutes once breaks are taken into account (*teaching time*)
- Thirty hours to thirty-seven hours and thirty minutes for length of the school week

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The differences between schools with the same length of day are as great as the differences between schools with *different* lengths of day

We found no correlation between longer school days and levels of deprivation when using the Indices of Multiple Deprivation (IMD) deciles, but we did find a weak correlation between longer school days and more deprived Income Deprivation Affecting Children Index (IDACI) deciles (0.15).¹ However, the variation of IDACI and IMD deciles between schools of the same length were significant, with some schools with the same length of day ranging across all ten deciles.

We found a similar pattern in relation to FSM eligibility. There was no correlation between levels of FSM eligibility and length of the school day, and we found great variation in FSM levels among schools with the same length of day.

We found a fairly strong correlation between length of the school day and the percentage of pupils who had been in sustained education, apprenticeship or employment for at least two terms after Key Stage 4 (KS4) (0.46) but this is largely driven by two outliers and, once removed, the correlation stands at 0.2.

There is little variation in the average outcomes of schools with different lengths of day and we similarly see greater variation amongst schools with the same length of day.

The length of the school day appears to have a bigger impact on attainment at KS4 than KS2

We found no or very weak correlations when considering Key Stage 2 (KS2) attainment and again found significant variation between the outcomes for schools with the same length of day.

But when we looked at KS4, we found much stronger correlations, especially when controlling for outliers. We found correlations of 0.49 for both disadvantaged and non-disadvantaged students' attainment and length of the school day, and a correlation of 0.28 between length of the day and the attainment gap.

Within these findings on KS4 attainment, however, the pattern of great variation between schools with the same length of day continues. In one case, we have schools with the same length of day with an attainment gap of 2% and 62% at KS4 respectively. These findings suggest that, whilst the length of the day may be significant, what schools do with this time is just as important.

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Executive summary

Our findings show that this is not a cut and dried case of extending the school day to improve outcomes.

It is a policy option that should only be pursued if we have clear evidence that it will be beneficial to pupils, particularly those from disadvantaged backgrounds who have lost out most during the COVID-19 pandemic. The implications of extending the school day could be incredibly expensive and resource-intensive and we need to be sure we're backing a policy that we know will give us the best value for money on narrowing the gap between young people from disadvantaged backgrounds and their better-off peers. Without this evidence, at a time when it's never been more important to focus on closing the attainment gap, pupils across the country would be better off if these resources are directed elsewhere.

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Introduction

Before the COVID-19 pandemic, the attainment gap between young people from disadvantaged backgrounds and their better off peers was 27.1%pts.² Since its onset and the ensuing lockdowns, all pupils have lost out on months of in-person learning. Schools were closed for most pupils between March and September in 2020, and again in the January and February of 2021, with students experiencing sporadic isolation periods in the intervening months. This has led to fears the attainment gap will widen rapidly and severely for young people from disadvantaged backgrounds once standard assessment resumes.³

The Education Policy Institute found that by the first half of the 2020 Autumn term, pupils had experienced learning loss of up to two months in reading and up to three months in maths.⁴ Disparities in home learning between young people from disadvantaged backgrounds and their better-off peers mean that this learning loss has not been distributed equally. In schools with a high proportion of pupils from disadvantaged backgrounds, learning loss was around 50% higher than in schools with very few of these pupils.⁵

The pandemic's impact on pupil's outcomes has led to a wide-ranging debate about education recovery. Within this debate, the extension of the school day has been touted as a key intervention, supported by both former Education Recovery Commissioner Sir Kevan Collins and Robert Halfon, Chair of the Education Select Committee.⁶ The most common extension proposed in England is 100 hours per school year – equating to approximately an additional half hour for each school day.

Whilst the Education Endowment Foundation has evidence to show two months progress can be achieved by extending the school day – three months for pupils from disadvantaged backgrounds – their evidence base is small. We do have the potential to see if this finding correlates within our education system.⁷ But no-one is collecting the data.

Schools have autonomy over the length of their school day and the Department for Education doesn't track how it varies. The English education system has a potentially significant range of school day lengths, but no way of measuring its impact on outcomes. Sir Kevan's proposed additional half hour could *technically* be already happening in some schools right now – we just need the data to look into it.

That's why we've analysed the length of school day from 239 schools across the country – randomly sampled – to see whether the length of teaching time, and this supposedly crucial half hour, is having an impact on outcomes for pupils. Because we care about disadvantage and where it manifests, we've also looked into free school meal eligibility and geographic deprivation.

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Introduction

This is a rapid review of the length of the school day using a small sample – **which is why we support the call for the Department for Education to comprehensively collect, analyse and make public this data.** But it is a great example of how policy calls which sound new are often already in action within the system, and there is lots of be learned from looking a bit closer.

Education recovery is the most important challenge the education sector will tackle in this generation. The length of the school day and the importance of time could play a pivotal role in this and looking to schools to see how they are already using this is a strong starting point. This report aims to get us started.

Methodology

To create our dataset, we started with a random sample of 1% of primary and secondary state schools in England. Independent schools, special schools and Pupil Referral Units weren't included, but the sample contains a random mix of other school types, including local authority-maintained schools, academies, academy converters and free schools. Because data on the length of the school day isn't collected centrally, the data was collected manually from school websites.

To create the random sample, we took the following steps:

- We used the [Ofsted Management Information dataset](#) to provide a list of schools.
- Independent schools, special schools and PRUs were removed.
- This list of schools was numbered sequentially from 1-100.
- An excel random number generator was used, and the schools with number 42 were selected for the sample.
- To provide further clarity for our findings, we decided to double our secondary school sample. We used the secondary schools numbered 92, because these are the obvious additions to sample 42.⁸

This method gave us an initial sample of 202, and a final sample of 239 schools once the additional secondary schools were added. The final sample consisted of 157 primary schools and 82 secondary schools.

The data on length of the school day, week and break times was collected manually from the school's individual websites. 222 schools provided both start and end times and 114 schools provided start and end times as well as the length of their lunch and other breaks. To use the best available data – and determine whether length of teaching time in particular was impacting outcomes – we used these 114 schools in our calculations.

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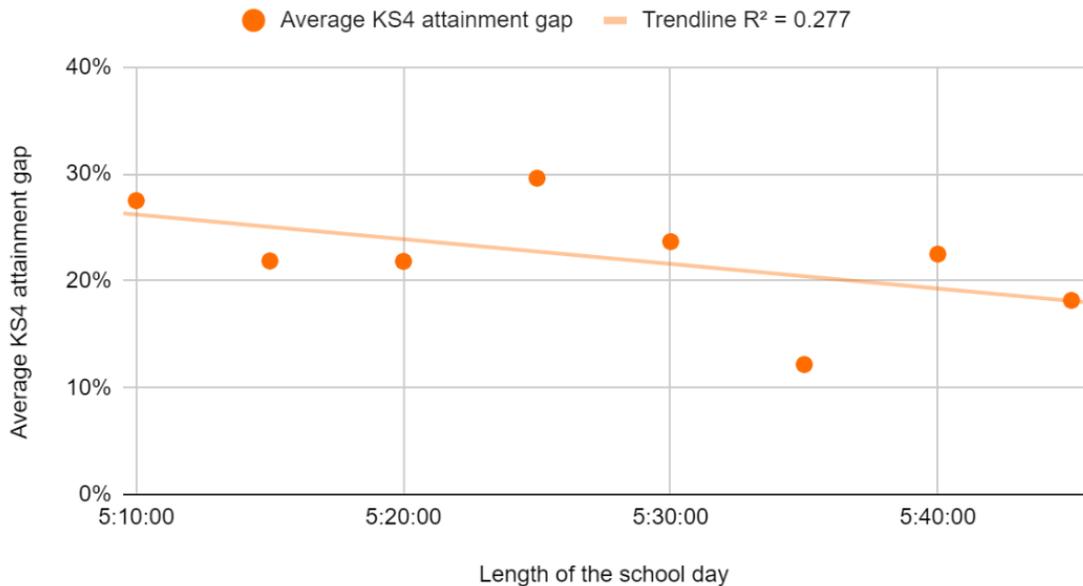
Methodology

When measuring the correlations, we excluded lengths of school day that applied to only one school in the sample. We did this because, as we'll discuss further in the findings section of the report, we found the variation between schools of the same length of day to be significant, and therefore didn't feel one school was necessarily representative of outcomes of all schools with that length of day. This left us with 103 schools in total – 47 primary schools and 56 secondary schools.

We also removed two schools which acted as outliers within the secondary school sample with a day of 6 hours, 30 minutes. Our findings show that there is significant range between schools with the same length of day and this, coupled with the outliers skewing the results in a way which made them misrepresentative of what the rest of the sample was telling us, made us confident in excluding them. For example, in Charts A and B below, the impact of including such outliers when measuring the relationship between the KS4 attainment gap and length of the school day is shown. The inclusion of the outliers not only changes the strength of the correlation but also changes it from a negative to a positive correlation.

Chart A – KS4 attainment gap vs. length of the school day - without outliers

Average KS4 attainment gap by Length of the school day

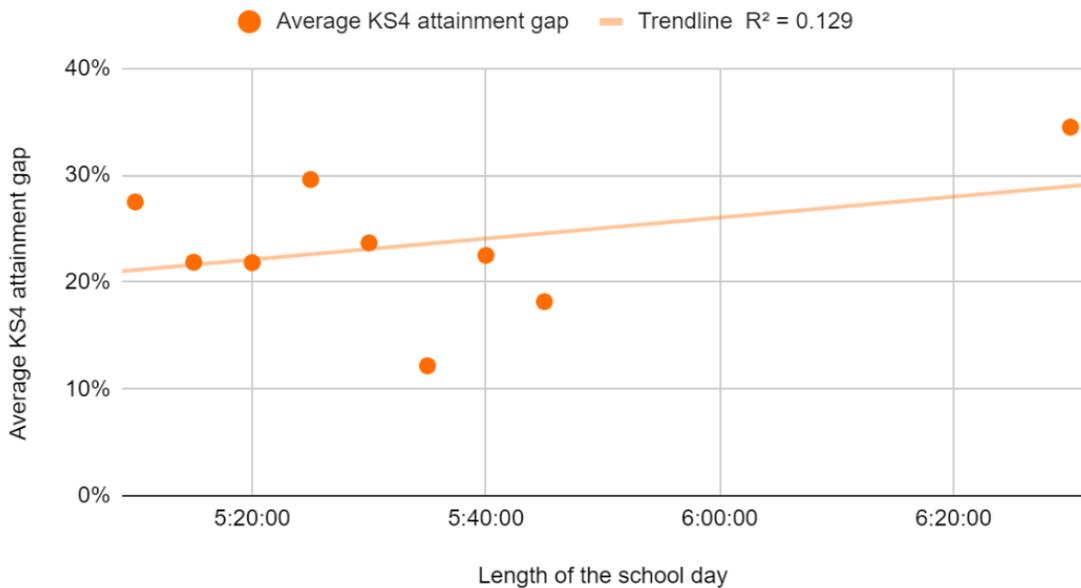


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Methodology

Chart B – KS4 attainment gap vs. length of the school day – with outliers

Average KS4 attainment gap by Length of the school day



As a check on the validity of the small sample, we measured the known correlation between higher levels of free school meal (FSM) eligibility and lower attainment amongst all schools within the Ofsted dataset and again within our own sample of schools to check if this relationship was repeated within the sample we were using. We found a similar pattern amongst our data set as we did within the Ofsted data set, although slightly weaker (0.25 vs 0.57 for KS4), showing the necessity of collecting this data at a national level.

To enable us to measure the impact of the differing lengths of the school day, we collected Department for Education data on attainment at KS2 and KS4, pupil destination data, and FSM eligibility. The data is taken from the academic year 2018-2019, which is both the latest full dataset available and allows us to avoid any potential impact of COVID-19. To measure potential relationships with areas of deprivation, we used the schools' postcodes and Indices of Multiple Deprivation (IMD) and Income Deprivation Affecting Children Index (IDACI) data from the latest release in 2019.⁹

This data was taken together to consider two overarching questions:

- A. whether there is significant variation in the length of the school day across schools
- B. whether this is having an impact on outcomes

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Definitions

- When referring to “*length of the school day*” in the report, we are referring to the length of day minus lunchtime and other break times: teaching time.
- When referring to “*disadvantaged*” we are referring to students eligible for the pupil premium. We use this term as it is the same term used across the datasets used.

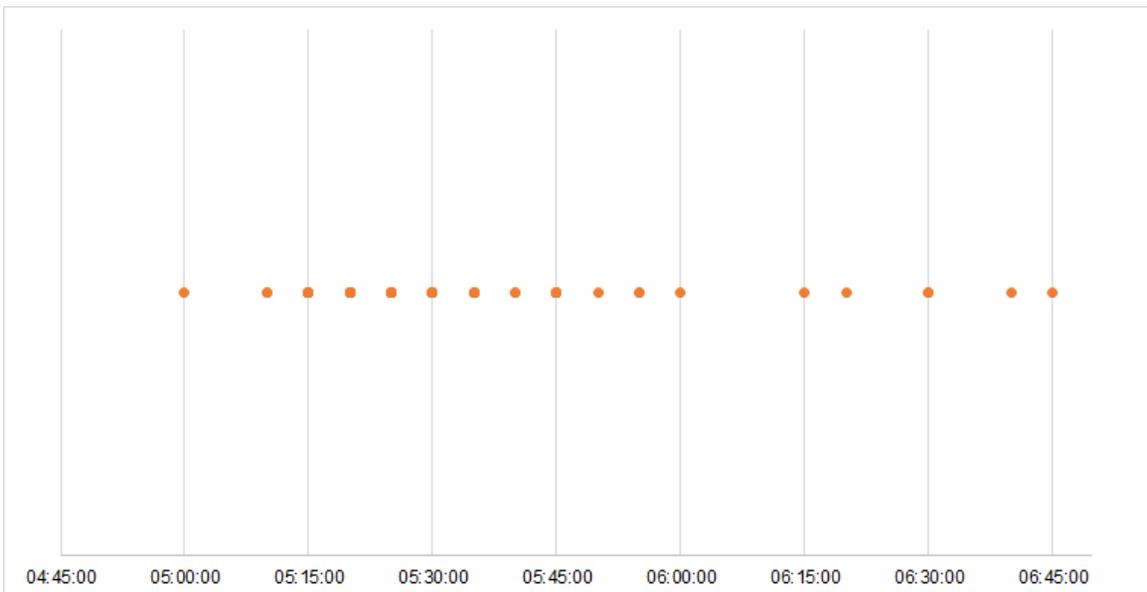
Findings

There is significant variation in the length of the school day

From our sample, the variation in length of the school day ranged from:

- Six hours to seven hours and 40 minutes for length of the average school day
- Five hours to six hours and 45 minutes once breaks are accounted for (*teaching time - hereafter referred to as “length of the school day”*)
- Thirty hours to thirty-seven hours and thirty minutes for length of the school week (because a few schools have different hours on different days, we have checked if the relationships are similar when looking at the full school week. They are, so we focus on the more intuitive length of the day in this report).

The variation of lengths of the school day within the sample



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Findings

There is much greater variation between secondary schools than primary schools

Length of the school day in secondary schools spanned the full range of the sample, from five hours to six hours and forty-five minutes, whereas all primary schools within the sample covered a much smaller range of five hours and five minutes to five hours and fifty minutes.

Start times ranged from 8am to 9:20am, with the most popular start time being 8:45am, closely followed by 8:30am. Primary schools start times varied less, with all in the sample starting between 8:30am and 9am, whereas secondary school start times again covered the full range of the sample.

Finish times varied more significantly, from 2:15pm to 4:25pm, with the most popular finish times 3pm and 3:15pm. We see a similar pattern as to start times, with all primary schools in the sample finishing between 3pm and 3:35pm, and secondary school finish times spanning the full range.

Secondary schools have longer days, but less break time

Most lunchtimes in the primary school sample were one hour in length, whereas most lunchtimes in secondary schools were between 30 and 40 minutes. Break lengths of 15-20 minutes were most common across both phases.

School week length is important to measure, but most schools are consistent across the school week

All but seven schools in the sample had the same school day length Monday-Friday and the seven who didn't were all secondary schools. Those who did have variations in their school week tended to finish earlier one or two days of the week, and this was in most cases reflected in longer days the rest of the week.

There is no significant variation between different types of school

The range in the length of the school day between types of school was only ten minutes (five hours and 20 minutes to five hours and 30 minutes). We also see no significant variation of length when measuring the length of the school day with breaks included, or length of the school week.

The variation between schools of the same type was just as significant and included a much greater range than when considering the average length of day across the different types of school.

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Findings

The differences between schools with the same length of day are as great as the differences between schools with *different* lengths of day

There is no significant link between length of the school day and area deprivation

We used both Indices of Multiple Deprivation (IMD) and Income Deprivation Affecting Children Index (IDACI) to measure area deprivation to see if there was a connection between areas of higher levels of deprivation and the length of the school day.

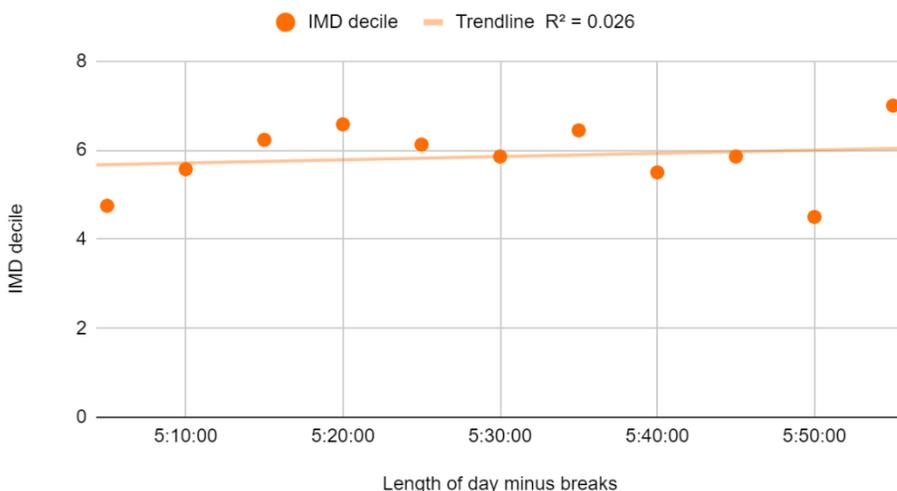
We found a very weak correlation between longer school days and IMD deciles (see Chart 1), even when removing outliers, and we didn't find longer school days being associated with higher or lower levels of deprivation in terms of IMD. We did, however, find a correlation between IDACI decile and length of the school day (see Chart 2).

However, these results continue to follow the pattern that emerged when we considered school type. The averages used to consider if there was a relationship between length of the school day and IMD/IDACI decile disguise large variation between schools with the same length of day. The range of IMD and IDACI deciles in schools with the same length of day was broad, significant and, in some cases, covered the full breadth of the deciles available.

From this we can conclude that the sample showed no clear relationship between an area's deprivation and the length of the school day, a somewhat surprising finding given the rise in schools closing early that was documented pre-pandemic.¹ It appears that the relationship between an area's deprivation and length of the school day is more influenced by factors individual to each school, rather than more area-based influencers.

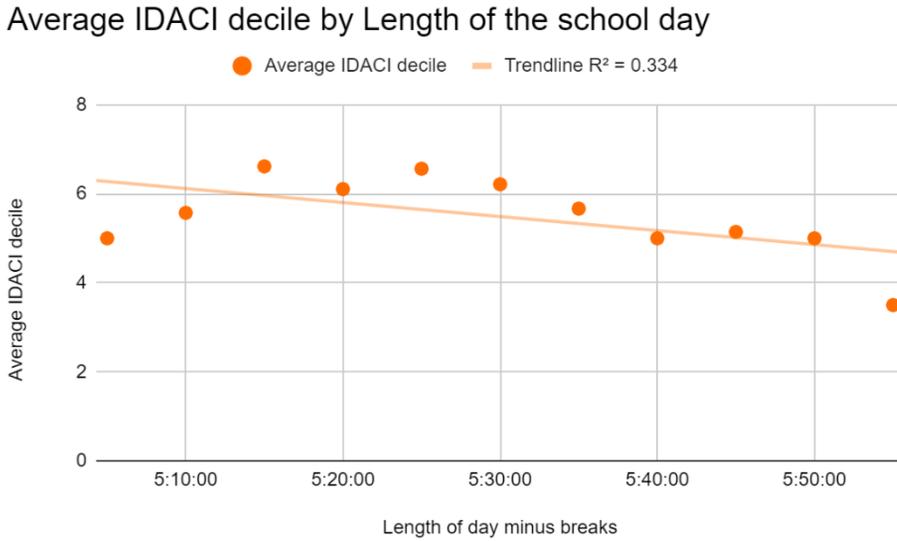
Chart 1 – Average IMD decile by length of the school day

Average IMD decile vs. Length of the school day



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Chart 2 – Average IDACI decile by length of the school day

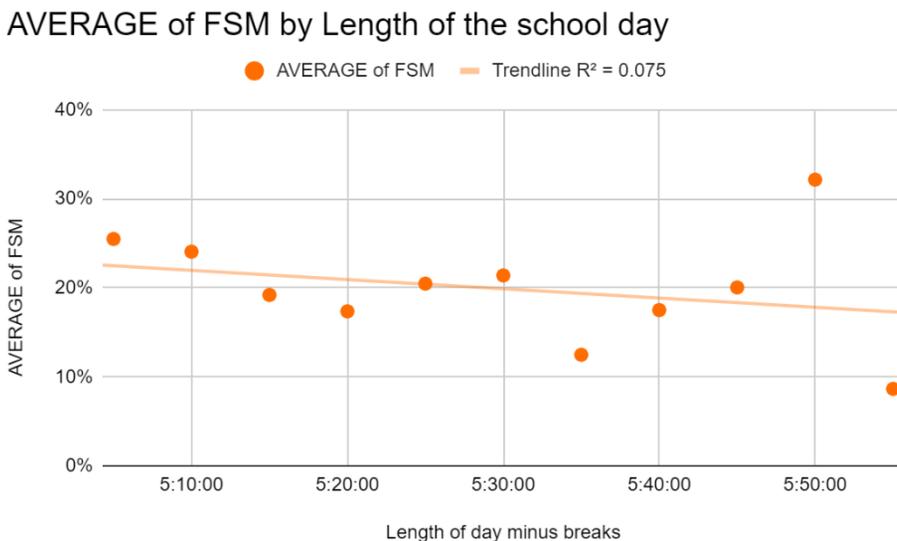


There is no significant link between length of the school day and levels of free school meal eligibility

We found no significant relationship between length of the school day and levels of FSM eligibility, with or without outliers taken into consideration (see Chart 3).

We continued to find significant variation between school days of the same length, in some cases by over 60%pts. This suggests that FSM eligibility is not driving the length of the school day (for example, longer school days implemented in schools with higher levels of FSM eligibility) but also that schools with certain lengths of the day are not attracting FSM or non-FSM pupils in any clear pattern, corresponding with the lack of relationship we found with area deprivation.

Chart 3 – Average of FSM by Length of the school day



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There is a relationship between length of the school day and pupil destinations, but the real story is more nuanced

We found a strong relationship between length of the school day and the percentage of pupils who were in sustained education, apprenticeship or employment for at least two terms after KS4 (0.46) but this correlation is in part driven by two outliers and once removed, the correlation stands at 0.2 (see Chart 4).

However, this is also driven by the small range across all schools within the sample, which magnifies the small differences of only one or two percentage points. The range across all the schools in the sample is 78%-100%, and when we exclude the four lowest performing schools out of the sample of 56, this range reduces to just 10%pts (90%-100%).

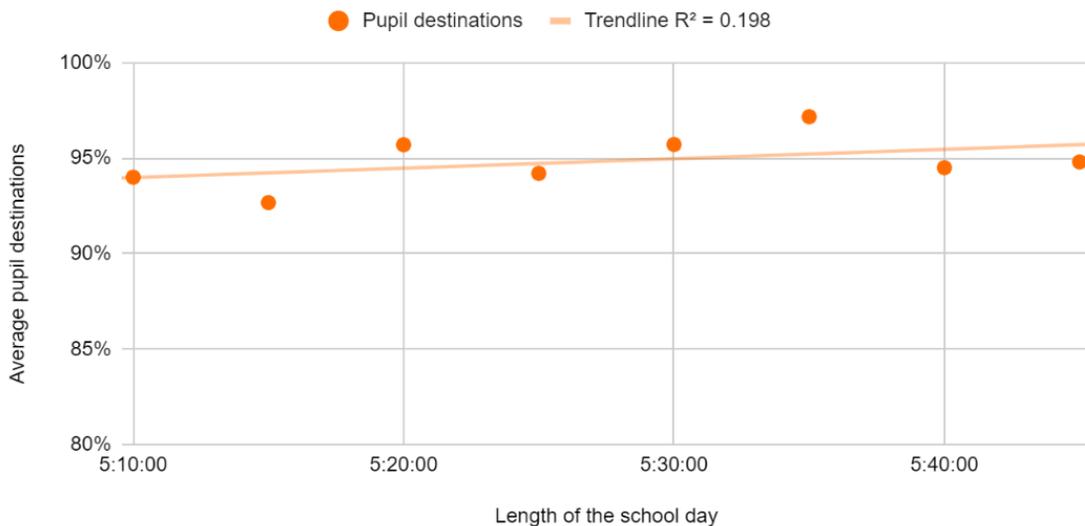
Consequently, when we take the average percentage of students in a sustained destination for each school day length, the range is only 9%pts (88%-97%). It drops further when we exclude outliers, to only 4%pts (93%-97%).

Whilst the correlation initially suggests a meaningful relationship, when we dig deeper, we find very small differences between schools which are overall performing highly on this measure, and therefore very small numbers of pupils as a result.

As with the other measures we have so far considered, we see just as great a variation between school days of the same length as we do between schools of different lengths. Because of the small range overall, this variation is smaller than with other outcomes, but is still proportionally significant.

Chart 4 – Average pupil destinations by length of the school day

Average pupil destinations by Length of the school day



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The length of the school day appears to have a bigger impact on KS4 attainment than KS2 attainment

We found a weak relationship between length of the school day and KS2 attainment

We found no or very weak correlations when considering KS2 attainment (as measured by reaching the expected standard in reading, writing and maths). This pattern held true across all attainment and attainment cut by disadvantage (see Charts 5-7).

Chart 5 – Average KS2 attainment (overall) by length of the school day

Average KS2 attainment (overall) by Length of the school day

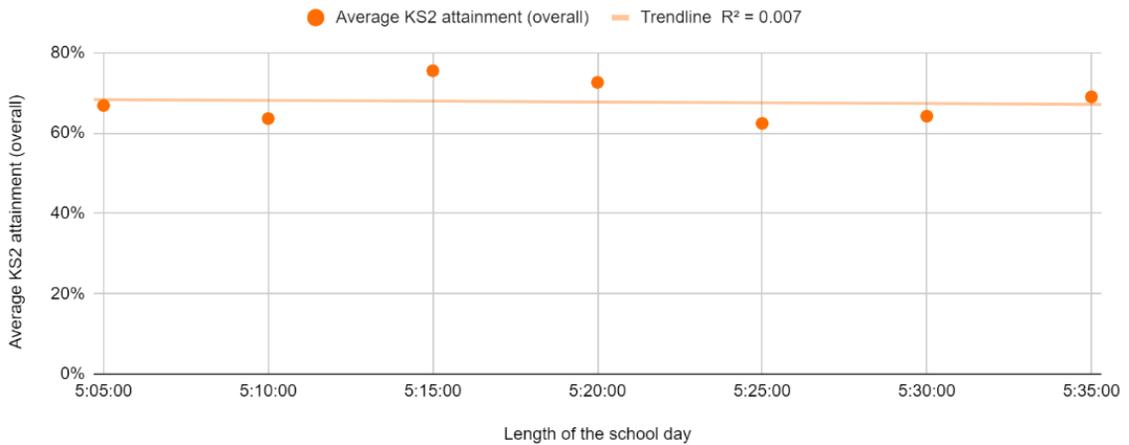
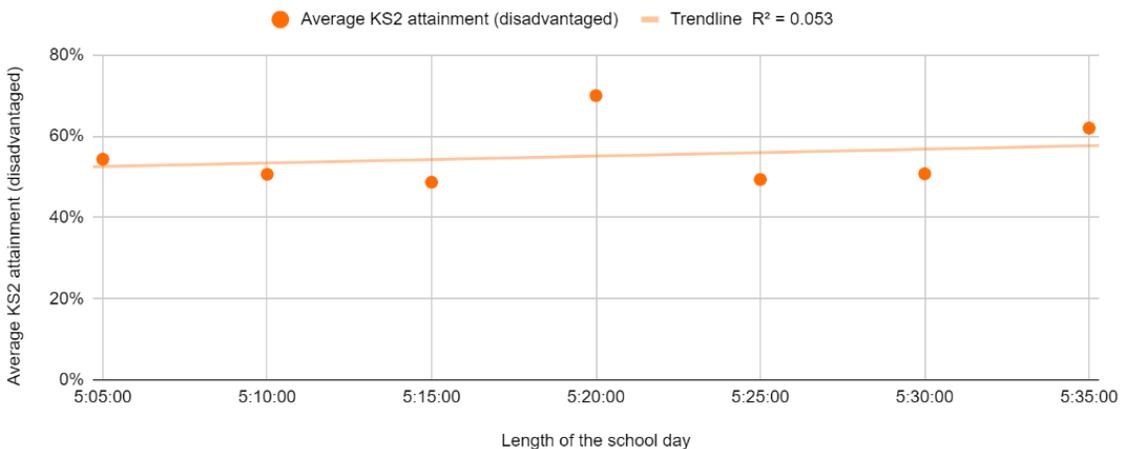


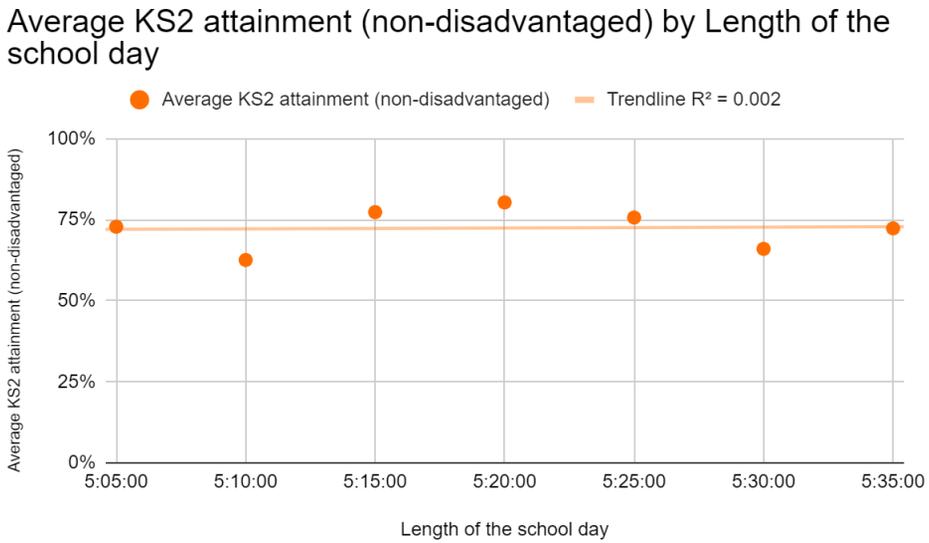
Chart 6 – Average KS2 attainment (disadvantaged) by length of the school day

Average KS2 attainment (disadvantaged) by Length of the school day



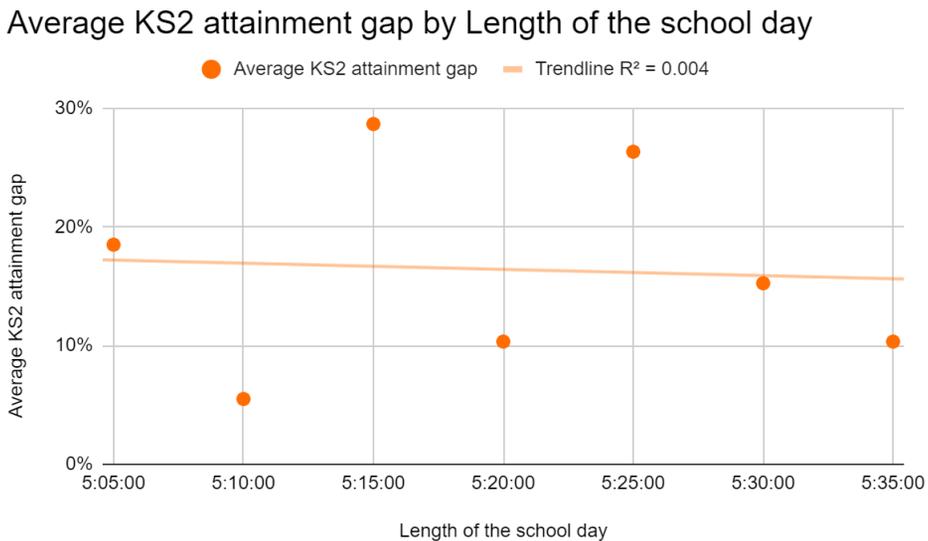
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Chart 7 – Average KS2 attainment (non-disadvantaged) by length of the school day



We similarly find little correlation between length of the school day and the attainment gap at KS2 (see Chart 8). However, as you can see in the chart, this is in large part driven by what appear to be outliers for the school day lengths of 5 hours and 10 minutes and 5 hours and 20 minutes. When we remove these, we find a stronger correlation of 0.24 between longer school days and a reduced attainment gap. But we don't believe these to be true outliers. Though they may appear so when considering the attainment gap, this isn't the case when measuring overall attainment or attainment cut by disadvantage. This appears to be driven by how the average attainment gap presents itself, rather than by true outliers.

Chart 8 – Average KS2 attainment gap by length of the school day



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We also again found significant variation in the attainment gaps between schools with the same day length, in some cases by more than 30%pts. This pattern also occurs for overall attainment and that broken down by disadvantage, although that is to be expected given the lack of correlation.

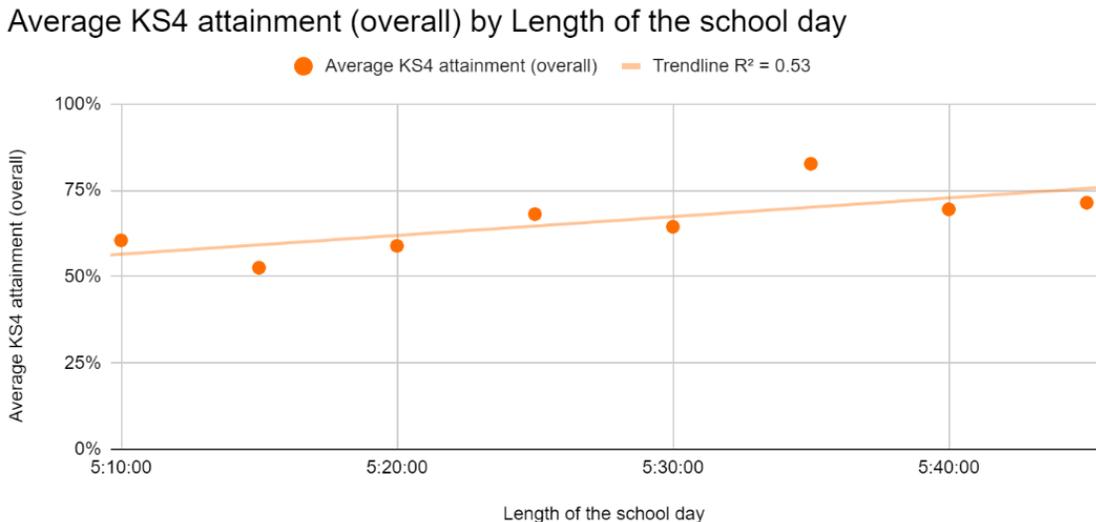
It's important to note that the sample size for attainment gap data is only 28 schools – this is due to the small cohort sizes of some primary schools in the sample, who don't release this data in order to protect the identities of pupils within the school. This only further demonstrates need for a larger sample size of school day length data.

We find a strong relationship when considering KS4 attainment

When we considered KS4 attainment (the % of pupils achieving grade 9-4 in their maths and English GCSEs) we did see a relationship, *if* we controlled for the two outliers whose length of day is 6 hours and 30 minutes. We excluded these because they skewed the results, but only excluded them once we had measured results both including and excluding them.

When controlling for these outliers, we found a correlation of 0.53 for overall attainment, and a correlation of 0.49 for both disadvantaged and non-disadvantaged students (see Charts 9-11).

Chart 9 – Average KS4 attainment (overall) by length of the school day



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Chart 10 – Average KS4 attainment (disadvantaged) vs length of the school day

Average KS4 attainment (disadvantaged) by Length of the school day

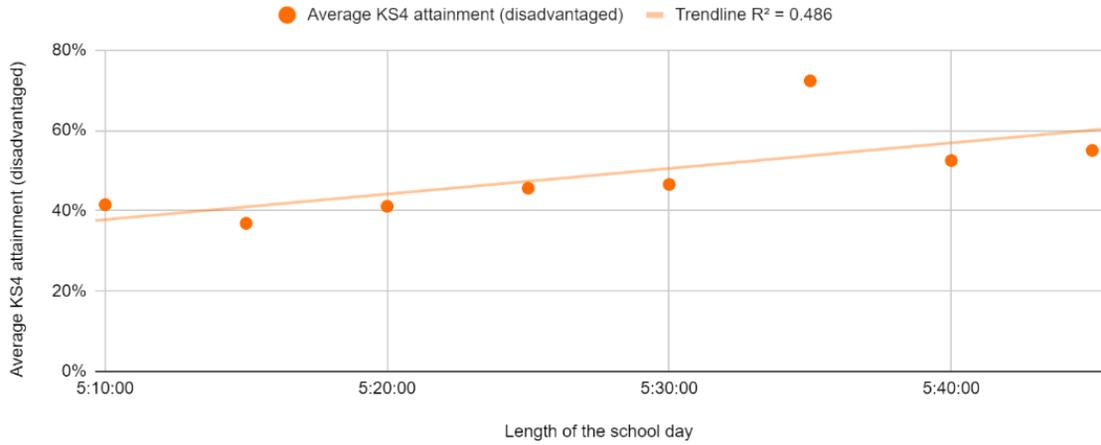
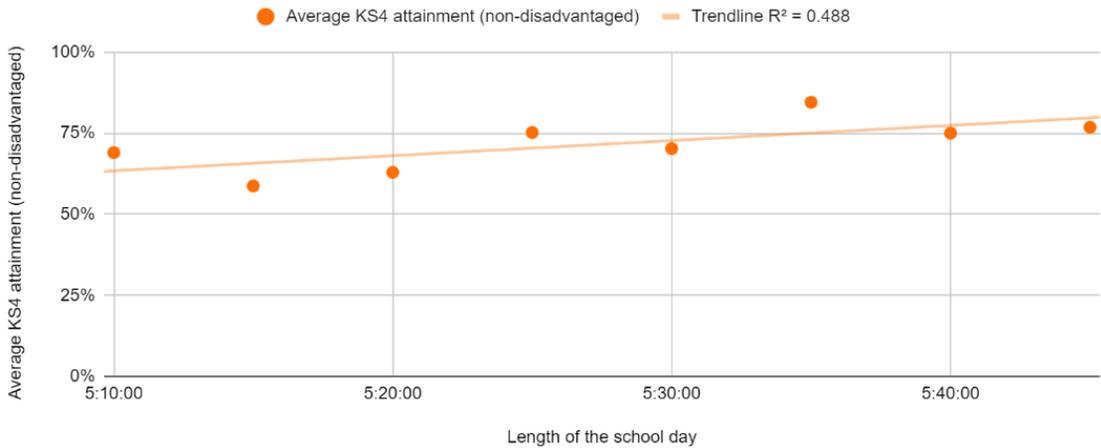


Chart 11 – KS4 attainment (non-disadvantaged) vs. length of the school day

Average KS4 attainment (non-disadvantaged) vs. Length of the school day



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We found a positive relationship of 0.28 between a longer school day and a lower attainment gap, suggesting that not only are advantaged and disadvantaged students performing better with longer school days, but that the longer school days are closing the gaps between them too (see Chart 12).

It is, however, important to note that these relationships all but disappeared when the outliers were inserted into the correlation. In the case of the attainment gap, we actually saw the opposite relationship, with a 0.13 correlation between longer school days and a *higher* gap (see Chart 13). Whilst these outliers were removed to give a better sense of the broader relationship, the drastic impact they have when included demonstrates just how malleable these results are to the inclusion of one or two additional schools. This again demonstrates the need for a greater sample size to truly measure the impact of the length of the school day.

Chart 12 – KS4 attainment gap vs. length of the school day - without outliers

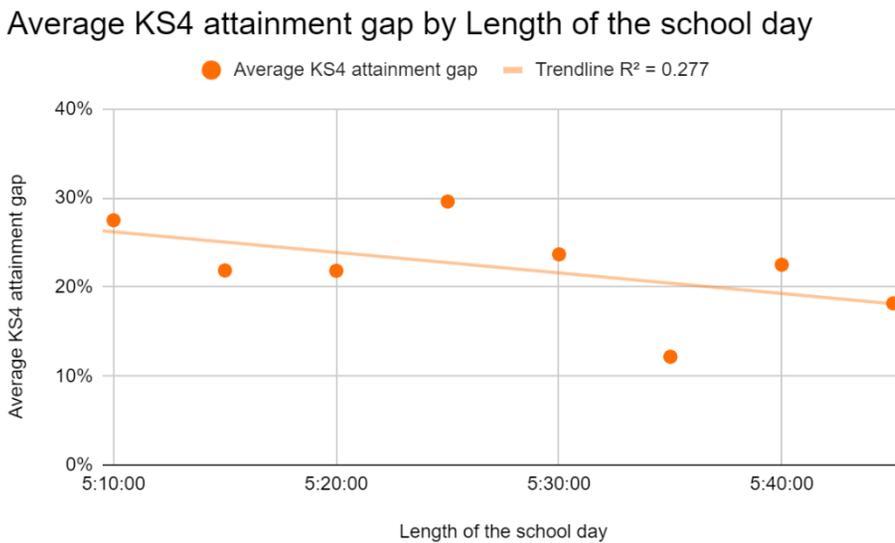
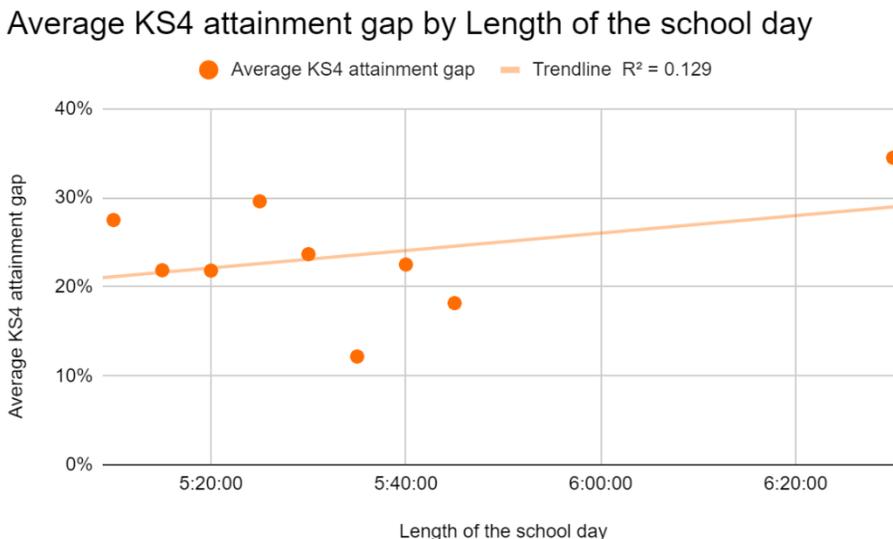


Chart 13 – KS4 attainment gap vs. length of the school day – with outliers



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We also continue to see massive variation between schools with the same length of day, in one case by up to 60%pts. This significant range shows that, whilst averages may produce correlations, they are also hiding significant differences between schools with the same length of school day. All these findings *must* be taken cautiously, because they appear to conceal what is really happening within the schools and the impact this is having on their pupils.

Conclusions

It isn't the time, it's what you do with it

The potential explanation for the massive differences between outcomes for schools of the same length of day is that, while time may indeed be a factor in some cases, it is not the determining factor in the relationships between individual schools and the outcomes we have measured.

If we have schools with the same length of day with an attainment gap of 2% and 62% at KS4 respectively, this suggests that it is not in fact the time that those pupils are spending in school or even in a classroom, but rather how that time is being used to the best effect.

There are myriad factors that go into the outcomes we've measured here – including student demographics, class size, teaching quality and available resources, all of which contribute to overall outcomes for students within schools. Whilst in some cases we appear to find an interesting relationship between length of the school day and some of these outcomes, it's much more likely that this relationship is being driven by what these schools have chosen to implement during this time.

More than anything, our findings demonstrate a clear need for data on the length of the school day to be collected at a national level. If it's possible to change results with the addition of merely two schools – as in the case of the KS4 attainment gap – there are many untold relationships that could be uncovered through a much larger sample. Our findings show that the relationship between longer school days and improved outcomes isn't clear cut – and the results of the introduction of a longer school day wouldn't be clear cut either.

Most importantly, our findings show that there isn't a cut and dried case for extending the school day to improve outcomes. It is a policy option that should only be pursued if we have clear evidence that it will be beneficial to pupils, particularly those from disadvantaged backgrounds who have lost out most during the COVID-19 pandemic. The implications of extending the school day could be incredibly expensive and resource-intensive and we need to be sure we're backing a policy that we know will give us the best value for money on narrowing the gap between young people from disadvantaged backgrounds and their better-off peers. Without this evidence, at a time when it's never been more important to focus on closing the attainment gap, pupils across the country would be better off if these resources are directed elsewhere.

References

1. Indices of Multiple Deprivation (IMD) measure relative deprivation in small areas in England. Income Deprivation Affecting Children Index (IDACI) measures the proportion of all children aged 0 to 15 living in income deprived families.
2. Department for Education, [Level 2 and 3 attainment by young people aged 19 in 2018](#), April 2019
3. Education Endowment Foundation, [Chief Executive Letter](#), 2020
4. Education Policy Institute, [Learning loss research: Understanding progress in the 2020 to 2021 academic year](#), February 2021
5. Ibid.
6. Education Select Committee, [Oral Evidence: Education Recovery](#), June 2021
7. Education Endowment Foundation, [Extending school time](#).
8. We would have sought a 2% sample here. To take a 2% sample from the original list of schools, we would have numbered schools from 1 to 50 and then picked randomly. Using number 42 as the random number, we would have got the schools numbered 42 in our list numbered 1 to 100, and also the schools numbered 92. In this sense, schools numbered 92 in our methodology for a 1% sample are the other half of a 2% sample, based on the number 42.
9. Indices of Multiple Deprivation (IMD) measure relative deprivation in small areas in England. Income Deprivation Affecting Children Index (IDACI) measures the proportion of all children aged 0 to 15 living in income deprived families.

About Impetus

Impetus transforms the lives of young people from disadvantaged backgrounds by ensuring they get the right support to succeed in school, in work and in life.

We do this by finding, funding and building the most promising charities working with these young people and by influencing policy and resources.

We support a number of charities helping to give disadvantaged young people a chance to succeed in school, in work and in life.

Report by: Helena Vine, Impetus

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