Access to special schools in England

Jon Andrews

March 2018

EDUCATION POLICY INSTITUTE

Research Area:
School Performance, Admissions, and Capacity



This publication includes analysis of the National Pupil Database (NPD):

https://www.gov.uk/government/collections/national-pupil-database

The Department for Education is responsible for the collation and management of the NPD and is the Data Controller of NPD data. Any inferences or conclusions derived from the NPD in this publication are the responsibility of the Education Policy Institute and not the Department for Education.

Figure 2 Contains National Statistics data © Crown copyright and database right 2016.
Contains OS data © Crown copyright and database right 2016

Background

Over the past 18 months, the Education Policy Institute has analysed the extent to which pupils have 'access' to certain schools. It has formed an integral part of our work on grammar schools, faith schools, free schools, and on access to high performing schools. We have defined 'access' by looking at whether a pupil lives within a reasonable travel distance of a given school.

But the phrase 'reasonable travel distance' is subjective. Whilst most would want a school within a short distance, many parents would make the trade-off of a longer journey to and from school if it meant, for example, their child attended a school with a preferred faith ethos, or a school with academic selection.

To date there is a large group of pupils whose travel experiences we have not yet examined. That is the 110,000 pupils who attend state-funded special schools.

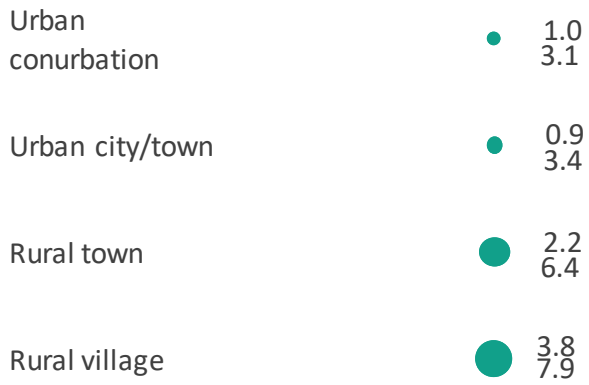
How we have estimated reasonable travel distances for mainstream schools?

It is not unreasonable to assume that the distances travelled by pupils are likely to vary by location and phase, a pupil attending a primary school in a large town or city would almost certainly expect to have a shorter journey than a secondary aged pupil in a rural hamlet.

Our reports have used data from the National Pupil Database to examine the straight-line travel distances between a pupil's home and their school. We have defined a reasonable travel distance as that travelled by the pupil at the 90th percentile of all pupils in this type of area – i.e. 90 per cent of pupils travel less than this distance. So, we have a distance that is greater than that travelled by the average pupil, but still travelled by a significant number of pupils (10 per cent travel distances that are further).

By way of illustration, in Figure 1 we calculate these straight-line distances for the cohort of pupils who were in Year 7 in January 2016. We also plot the distance travelled by the median pupil for comparison.

Figure 1: The straight-line travel distance between a pupil's home and their school, year 7 pupils in mainstream schools January 2016 – median and 90th percentile plotted and labelled[1]



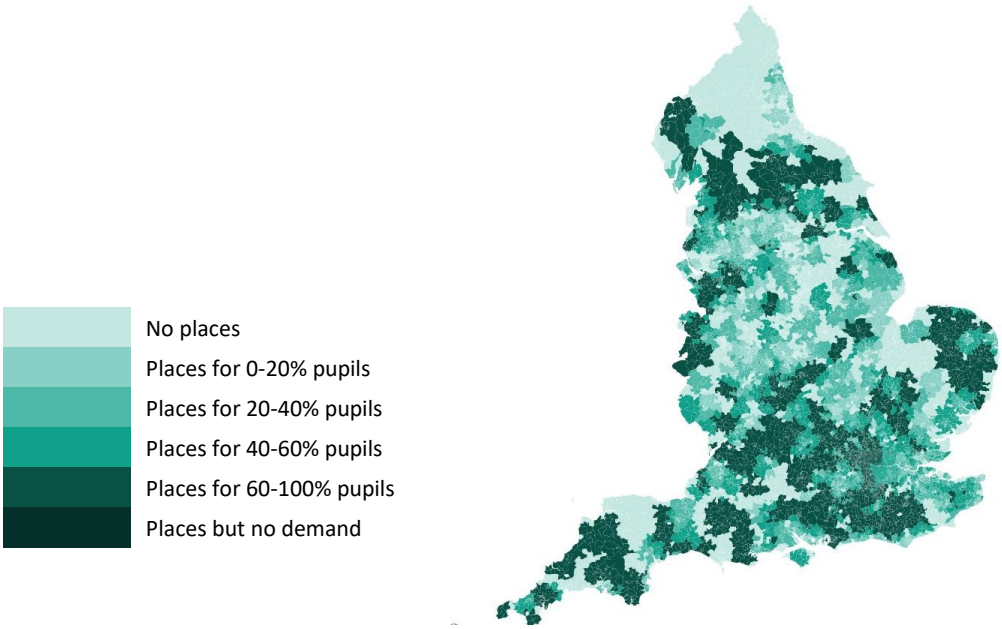
[1] Width of bubbles is proportionate to the distance.

As expected, those living in urban areas tend to travel a shorter distance than those living in rural communities. Even over that shorter distance, pupils in urban areas are also likely to have a range of schools to choose from, though they are not necessarily high performing schools.

Our recent report, *Access to High Performing Schools in England*, illustrated this further.[2] In it we calculated the proportion of pupils in each lower layer super output area in England who had access to a high performing school.[3]

High performing schools are not evenly distributed across England. As the map in Figure 2 shows, higher densities of high performing school places are evident around London, much of the South, and parts of the North. On the other hand, large parts of the North East and the Midlands have little or no access to high performing secondary school places.

Figure 2: Density of high performing secondary school places across England, 2015[2]



How far *should* pupils expect to travel?

Following the conclusion of the 2016 consultation *Schools that Work for Everyone* the Schools Minister Nick Gibb stated that "in 65 local authorities, fewer than half of children starting secondary school in 2015 had a good or outstanding school place within 3 miles of their home."[4]

In other words, the reforms proposed by ministers in that consultation sought to address the fact that many pupils do not have the choice of a high performing school nearby.

Clearly where a child lives in the country matters in terms of their access to schools. For ministers to have an ambition that all children should have a good school nearby can hardly be considered as controversial. Furthermore, by virtue of their subsequent statements, the definition of 'nearby' was within three miles.

[2] J. Andrews and N. Perera, *Access to high performing schools in England*, December 2017.
[3] A lower layer super output area (LSOA) is a small area consisting of between 400 and 1,200 households.
[4] DfE, *Minister Gibb on grammar and faith schools*, February 2017

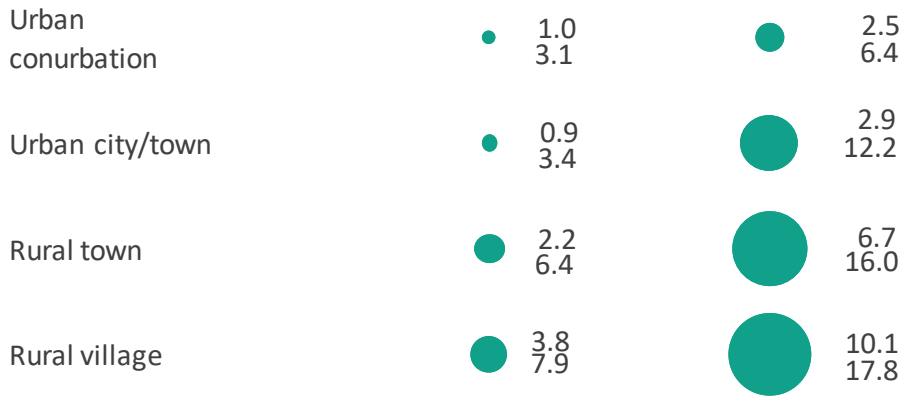
In mainstream urban secondary schools, the vast majority of pupils currently live less than three miles from their school - in fact, half of pupils live within a mile. It is important to remember here that ministers did not just want a school nearby, they wanted a school that was good or better. So, whilst these pupils may not be travelling very far to a school, they are not necessarily travelling to 'good' schools as defined by Ofsted outcomes.

How far are pupils in special schools travelling?

That brings us on to a significant group of pupils who, so far, have been excluded from our own analysis and the government's consultation. The title, Schools that Work for Everyone, was something of a misnomer. The consultation said nothing of the 110,000 pupils that are educated in the nearly 1,000 state-funded special schools.[5]

How do their experiences compare with those attending mainstream schools? Firstly, we carry out the equivalent travel distance analysis for pupils in special schools that we set out above. In Figure 3, for each area type we find the median and 90th percentile of straight line travel distances between pupil's home and their school. Figures for mainstream schools are included to aid comparison.

Figure 3: The straight-line travel distance between a pupil's home and their school, year 7 pupils in mainstream schools (left) and state-funded special schools (right), January 2016 – median and 90th percentile plotted and labelled[6]



In urban conurbations, the average (median) year 7 pupil in a mainstream school lives 1 mile from their school, for the average pupil in a special school this more than doubles to 2.5 miles. In more remote areas this increases to 3.8 miles for pupils in mainstream schools and almost trebles to 10.1 miles for pupils in special schools.

In urban areas, the average pupil attending a special school lives 'nearby' (within 3 miles) but in rural areas the average pupil travels more than double that and in rural villages over three times that. Even within urban areas, large numbers of pupils at special schools are travelling significant distances. If we used our 90 per cent rule – in line with our methodology for mainstream schools – then this would suggest that a reasonable travel distance to attend a special school is 12 miles within towns and over 16 miles in rural areas. Again, this is not necessarily travel to a 'good' school as defined by Ofsted (although Ofsted rate over 90 per cent of special schools as good.)

[5] DfE, *Schools Pupils and their Characteristics*, June 2017.
[6] Width of bubbles is proportionate to the distance.

How we under-estimate the true travel distance for all pupils

Measuring straight line distances is a relatively quick and easy way to estimate how far pupils are travelling to school each day. However, by definition, they are a lower bound of the true distance since journeys rarely follow a straight line.

To reflect the true journey taken by pupils each day more accurately, we can use the route planning functionality of Google maps. This functionality allows us to plot a travel route between two points and to define:[7]

- the mode of transport (we have used journey by car as it is likely to follow a similar route to walking whilst allowing for longer journeys); and
- the time of day (we have used a weekday morning at 9am).

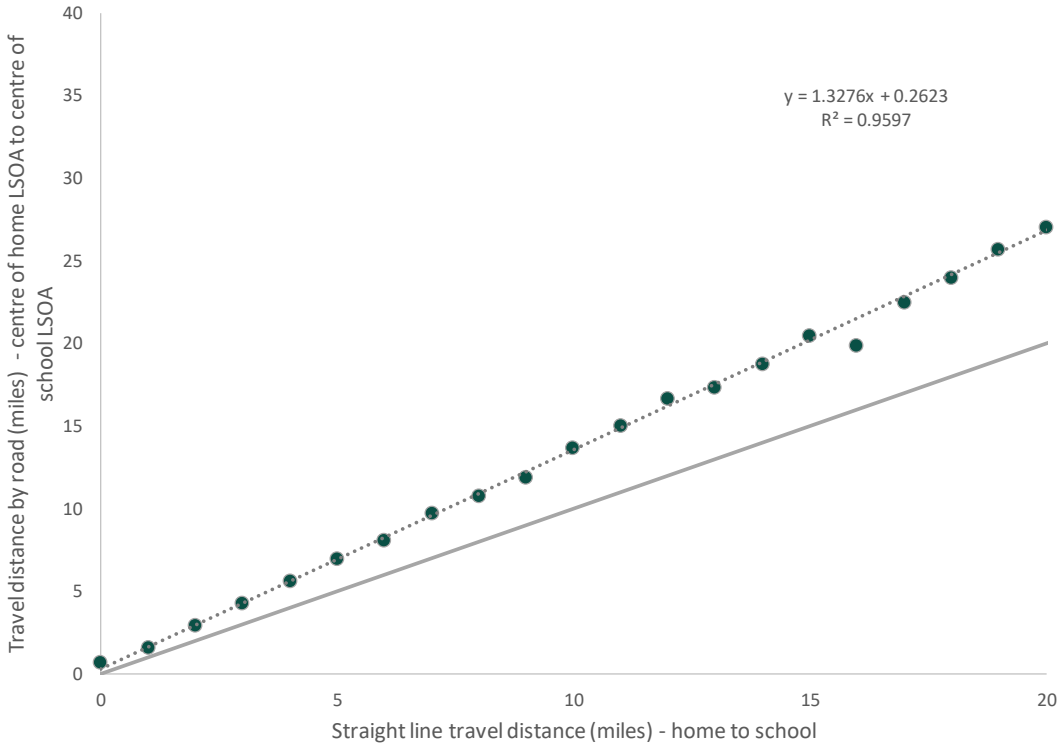
It is not practical to carry out this analysis for all pupils in the year 7 dataset[8], so we constructed a sample of approximately 10,000 cases with broadly equal numbers of:

- Non-SEND pupils in mainstream provision
- SEND pupils in mainstream provision
- SEND pupils in a unit / resourced provision
- SEND pupils in special schools.

Figure 4 plots the mean calculated journey distances against straight line travel distances for these pupils. The solid diagonal line shows where actual journey distance is equal to straight line distance, the broken line shows a line of best fit that results from analysing the underlying pupil data. It shows that, on average, the straight line distance underestimates the actual travel distance by 0.3 miles per mile of straight line distance plus a further quarter of a mile.

[7] Here we use the lower layer super output area of the pupil's home and their school.
[8] The number of calls to the Google API in a given day is capped with calls beyond the cap being charged. The cap is set at 2,500, there are approximately 600,000 pupils in a given cohort.

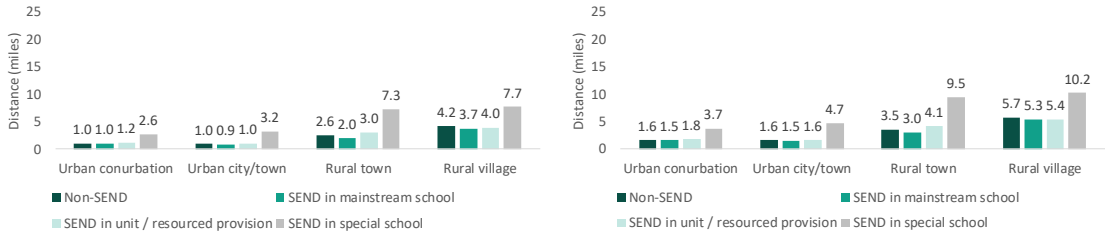
Figure 4: Mean travel distance by road at one mile intervals of straight line distance for year 7 pupils, January 2016[9]



We can now repeat the median and 90th percentile analysis for the travel distances derived from Google maps route planner. As this analysis looks at a subset of the complete dataset the analysis based on straight line distances is included for comparison.

The average child living in a large city who attends a special school travels 3.7 miles in each direction to get to and from school – in towns and smaller cities, this increases to 4.7 miles (Figure 5). If we examine the 90 per cent threshold, the distances are striking (Figure 6). Even in large urban conurbations pupils are travelling nearly 9 miles to get to school, in rural areas it is over 20 miles.

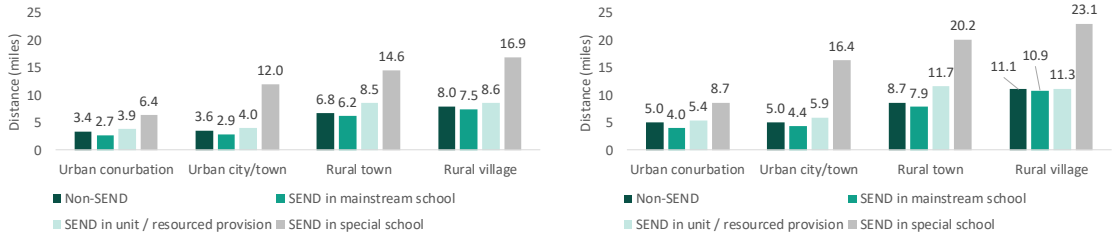
Figure 5: Median home to school travel distances for a sample of 10,000 year 7 pupils based on straight line distances (left) and Google directions for car (right)[10]



[9] Note that to avoid disclosing data about individuals, this chart is plotted using the mean distance by road at one mile intervals of straight line distances. However, the equation summarising the relationship and the associated R-sqr value are derived from the pupil level data, not using these mean scores.

[10] Note that the straight-line distance cut-offs here are slightly different from the analysis above as we have used a sample of pupils. They are reasonably aligned but the sample provides slightly shorter distances for those in rural villages in particular.

Figure 6: 90th percentile of school travel distances for a sample of 10,000 year 7 pupils based on straight line distances (left) and Google directions for car (right)

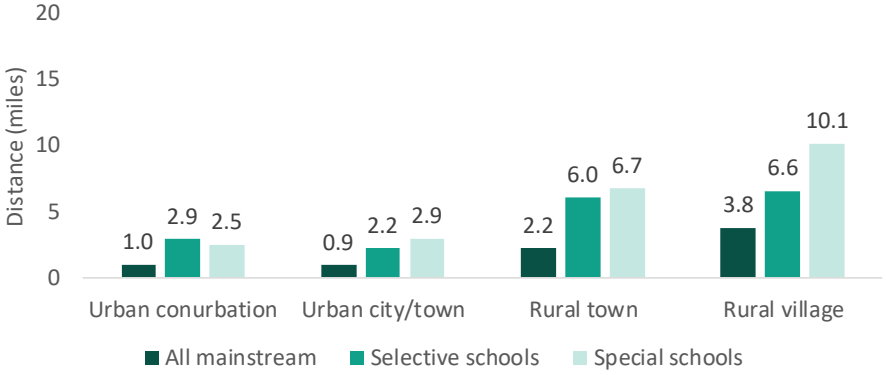


Should we be concerned by these distances?

The fact that pupils in special schools are having to travel further is not surprising. The relative number of special schools in comparison to mainstream schools means this is simply mathematically logical. The important question is, is it reasonable for pupils to be travelling a given distance each day?

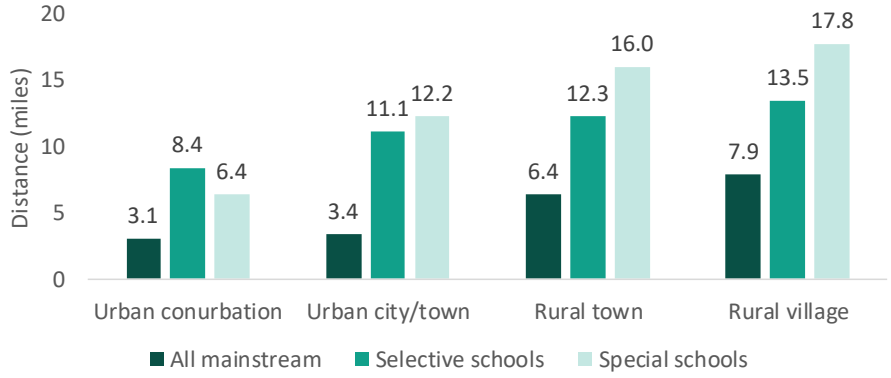
We return to *Schools that Work for Everyone* and its most controversial element, the proposed expansion in the number of selective schools. The fact that pupils travel further to grammar schools than other mainstream schools is well known.[11] What we are now able to do is compare the straight line travel distances for pupils in mainstream schools, selective schools and special schools (Figures 7a and 7b).

Figure 7a: Median straight-line travel distance between a pupil's home and their school, year 7 pupils by school type, January 2016



[11] J. Andrews, J. Hutchinson and R. Johnes, *Grammar Schools and Social Mobility*, September 2016

Figure 7b: 90th percentile of straight-line travel distance between a pupil's home and their school, year 7 pupils by school type, January 2016



Responding to earlier analysis showing average travel distances of three miles and one mile respectively, the Department for Education have said that the relative travel distances are *"further evidence that there are not enough grammar schools to meet demand from families."*[12]

Putting aside for one moment that again its is not mathematically surprising that pupils travel further to grammar schools than non-selective schools, these results raise the question of why aren't all school types being considered in the same way?

The fact that pupils were travelling further to a grammar school was used to justify the need for more of them. But outside of large cities, pupils at special schools are travelling even further each day. Remember too that we set our 'reasonable travel distance' threshold at the 90th percentile not at the median. If we apply the same approach to mainstream and special schools, we would argue that for pupils in rural areas it is reasonable for pupils at special schools to be travelling over 16 miles a day (straight line distance) in each direction.

[12] DfE, *Education in the media: Distance travelled to grammar schools*, October 2016

Conclusion

The Government's *Schools that Work for Everyone* consultation of the autumn of 2016 was undoubtedly controversial. Ministers argued that more good schools were needed and that too many children do not live within a reasonable distance of a good school. Potential solutions put forward included the expansion of the free schools programme, new faith schools, and, most controversially of all, the introduction of a wave of new grammar schools.

The findings of our own research found that there would be limited, if any, benefit in the Government's proposals and in fact they would be likely to be damaging for some groups. It is nevertheless the case that in some areas of the country, access to a good primary or secondary school is limited.

But none of this considers the significant number of pupils who attend the country's special schools. Whilst ministers worry that children are living more than three miles from a good school, this new analysis shows that pupils in special schools are having to travel further than this to reach school each day. In cities, the average pupil at a special school is travelling nearly four miles while in rural areas it is ten. And a significant number are travelling much further still: a tenth of pupils at special schools in cities travel nearly nine miles and in rural areas it is over 20 miles.

This is not a measure of the struggle to attend a 'good' school, these are the distances travelled across *all* special schools. Many pupils will be travelling long distances to reach the schools that best meet their specific need and gives them the best chance in life; others may have no such school within any sensible definition of a 'reasonable travel distance'.

For some pupils these distances risk becoming insurmountable, if they are not already. A reliance on home to school transport leaves pupils vulnerable to cuts in local authority budgets and changes to local provision. In the absence of alternative arrangements, these pupils could end up leaving the system altogether.

If the government is serious about providing good and accessible schools for all pupils then they need to give greater attention to special schools.