

2001 census

The geography of education in Britain

Ben Wheeler, Richard Mitchell, Mary Shaw and Danny Dorling

Where you live in Britain seems to affect how well you do at school. This article is the second in a series which uses census data to consider social and population geography in the UK.

We described the census in our previous article, 'The geography of health in Britain' which appeared in *GEOGRAPHY REVIEW* Vol. 19, No. 5 (May 2006). In brief, the government has carried out a census every 10 years for the last 200 years. The census not only measures how many people live in the UK,

it also provides data about where they live, their housing, health, employment, education, ethnicity and so on. Census data are used to help local and national government bodies plan and run services and devise social policies, but they are also useful for researching what life in Britain is like for all of us.



Questions about education

There were several questions relevant to education in the 2001 census questionnaire. Everyone in the UK was asked whether or not they were currently in full-time education and what qualifications they had already obtained (such as NVQs, GCSEs, A-levels and degrees). In England and Wales (but not in Scotland and Northern Ireland) people were asked if they had a professional qualification to teach in schools. People were also asked for their occupation. This, combined with the professional teaching qualification question, allowed us to identify the number of people working as qualified school teachers.

What does the census tell us?

Of the 5.7 million people in England and Wales aged 16–24 in April 2001, roughly 1 million (17.6%) had 'no qualifications'. Figure 1 shows the distribution of 16–24-year olds according to their economic activity and the level of qualification they hold. This clearly shows that young people with no qualifications are more likely to be economically inactive or unemployed.

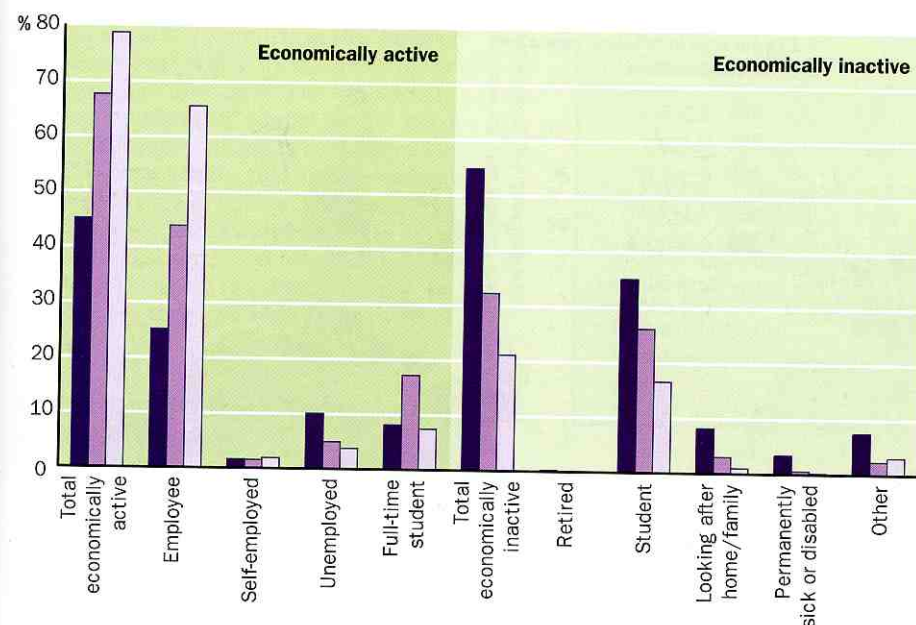


Figure 1 Economic activity of 16-24 year olds by level of qualifications, England and Wales, 2001

- 16-24-year olds with no qualifications or level unknown (%)
- 16-24-year olds with lower-level qualifications (%)
- 16-24-year olds with higher-level qualifications (%)

Note: Those with unknown 'qualifications' are lumped together with those who definitely do not have any qualifications in the census data. These are most likely to be people without widely recognised, school-based qualifications, or who made a mistake on the census form. 'Lower-level' qualifications include GCSEs, A-levels and NVQ level 1-3; 'higher-level' qualifications include undergraduate and postgraduate degrees, NVQ levels 4 and 5, HND, HNC and some professional qualifications.

How does the number of teachers vary?

The census counted 662,000 working, qualified teachers in England and Wales — one teacher for every 16 children aged 5-15. The data don't tell us about teachers working part-time, although government figures for 2001 indicated one full-time equivalent (FTE) teacher for about every 24 children aged 5-15. For this analysis, we divided England and Wales up into 109 areas — counties, unitary authorities and the former metropolitan authorities.

The census also counts school-age young people, which allows us to compare the

number of qualified and working teachers with the number of young people in each of the 109 areas. Figure 2 shows that the number of 5-15-year olds for each working and qualified teacher ranged from about 8 to 35. Notice that there are generally lower numbers of young people per teacher in the rural areas of England and Wales, and much higher numbers of children per teacher in the urban areas (especially in smaller towns and cities).

Teachers and qualifications

The next set of results is about 17-year olds who are still in full-time education,

inset 1 Maps and cartograms

The map on the left of Figure 2 is a **cartogram**. It shows the same information as the map on the right, but in a different way. Each of the areas is re-sized so that its space on the page is proportional to its population. This is helpful, because on the normal map, urban areas (like London) that are small but have large populations can be hard to see, and rural areas (like mid-Wales) that are very large, but have relatively small populations, are dominant. The cartogram allows us to see geographical patterns that otherwise might not be visible.

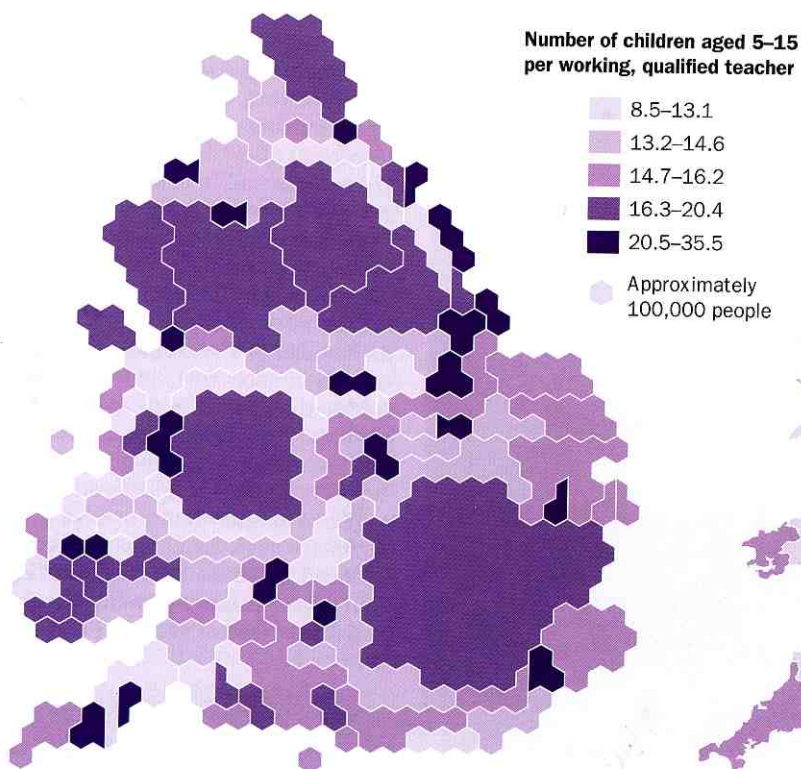
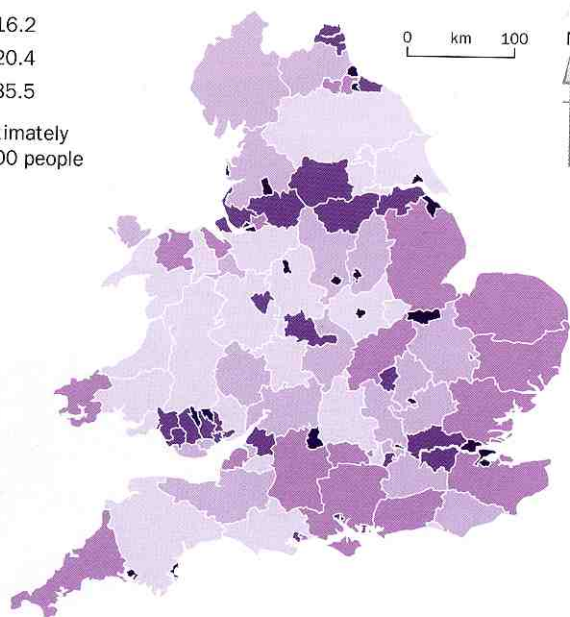


Figure 2 The distribution of working, qualified teachers across England and Wales, 2001 (see Inset 1)



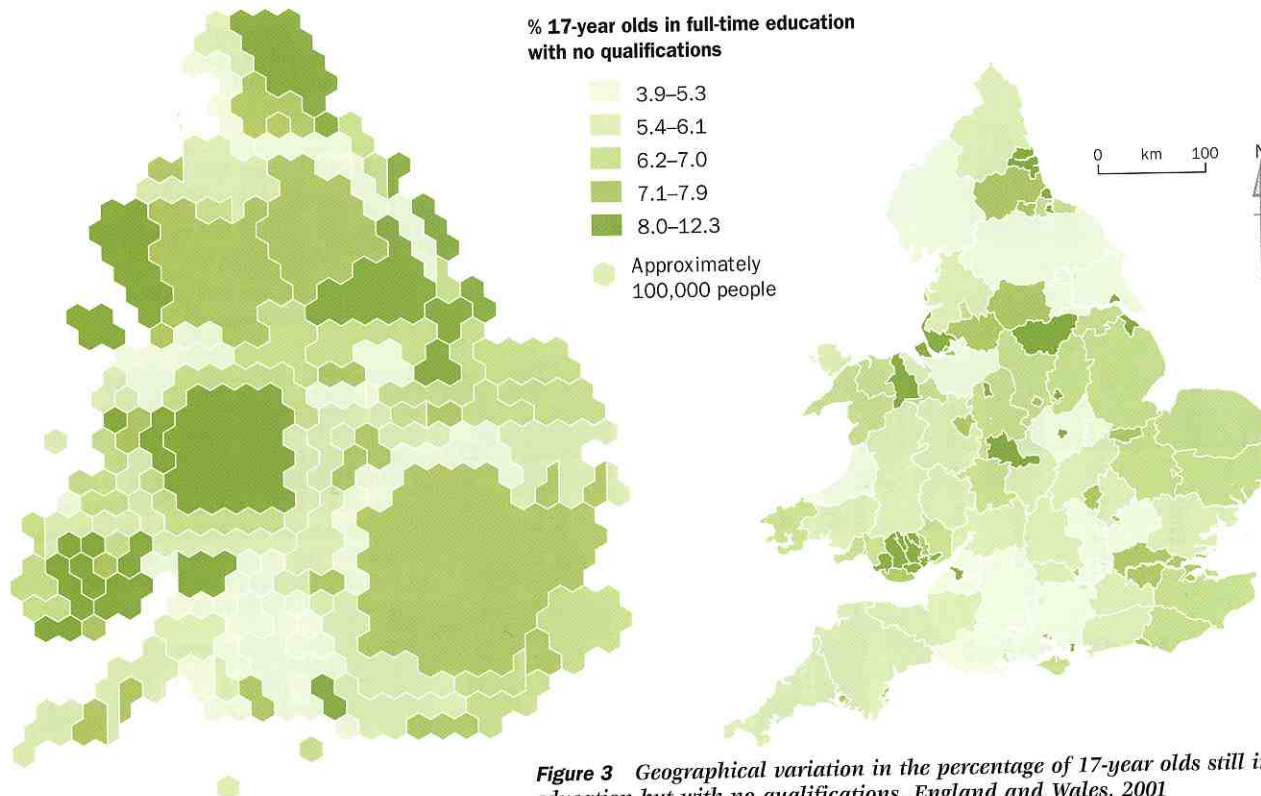


Figure 3 Geographical variation in the percentage of 17-year olds still in education but with no qualifications, England and Wales, 2001



but have no qualifications. The system seems to have failed these young people as they did not obtain standard qualifications at 15 or 16 when their peers did. In 2001 in England and Wales, there were 427,500 17-year olds in full-time education, 29,200 (7%) of whom had no qualifications. The percentage of 17-year old students with no qualifications ranged from around 4% to 12% and their geographical distribution is shown in Figure 3.

In many ways, Figures 2 and 3 show a similar pattern. Those areas which have a higher number of young people per teacher (Figure 2) also have a higher number of 17-year olds still in education but without any qualifications (Figure 3). We can explore how similar these patterns really are by using a graph.

Figure 4 plots the two measures, comparing the number of teachers per child and the number of 17-year olds without qualifications in each area. This graph demonstrates that, in general, areas with more children for each teacher do tend to have more young people without qualifications. You cannot easily get qualifications without someone to teach you! However, the graph and maps show that areas with the greatest need for educational resources (those with a lot of unqualified young people) tend to have the lowest availability of teachers per child.

Teaching matters: there are fewer teachers in areas of low achievement

This situation is similar to the 'inverse healthcare law', which we described in the first article in this series. The areas where greater numbers of young people need 'more education', appear to be those which have fewer teachers, just as areas where more people are ill tend to have fewer doctors. However, just as with doctors and other health professionals, we need to be aware that teachers do not necessarily work in the areas where they live, and that many work part-time.

Relationships between generations

It is often said that young people whose parents did well at school, will do well at school themselves. The census doesn't tell us specifically about the educational achievement of young people and their parents, but we were able to use the data to explore this idea. We compared the proportion of 16–17-year olds in each area who had obtained the standard qualifications for their age (GCSEs, Scottish Standard Grades etc.) to the proportion of adults of their parents' generation with high-level qualifications (degrees and so on). This relationship showed an interesting geographical pattern, especially since the situation appeared to be different in Scotland from the rest of the UK.

Figure 5 shows that in England, Wales and Northern Ireland, there are quite big differences between areas in the proportion of young people getting their standard qualifications. However, it also shows that the areas with a higher proportion of young people who got their standard qualifications (GCSEs etc.) tend to have a lot of highly qualified adults aged 40–54. Remember, the census data do not allow us to say for sure that these adults are the parents of the young people; we can only compare people from the two age groups who live in the same area.

The pattern found for England, Wales and Northern Ireland suggests that the geographical difference in good qualifications is unlikely to change over time because young people's educational achievement does seem to be strongly related to that of their parents' generation. However, in Scotland there seems to be very little variation between areas in terms of the proportion of young people who got their standard qualifications, and no apparent association with the proportions of highly qualified older people living in the area. In simple terms, this tells us that Scottish schools are better at taking young people from all social backgrounds and helping them to get good qualifications. Outside Scotland, the social

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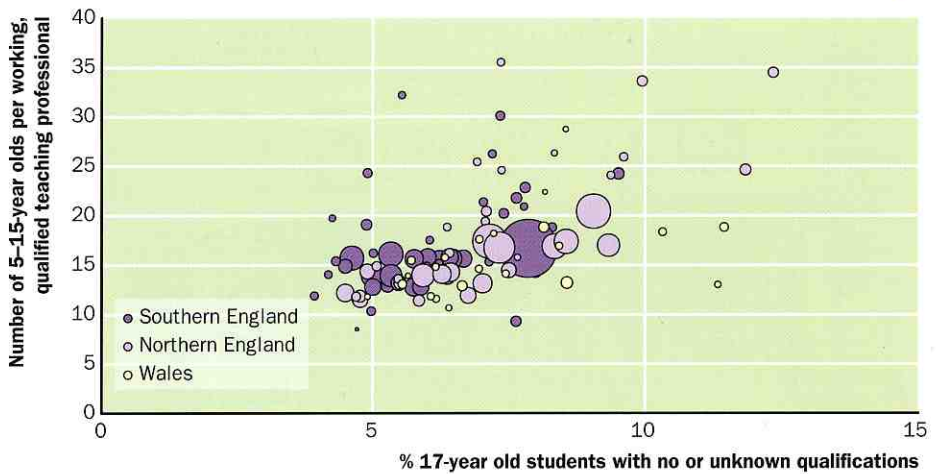


Figure 4 Graph illustrating the 'inverse education law' in 109 areas of England and Wales, 2001

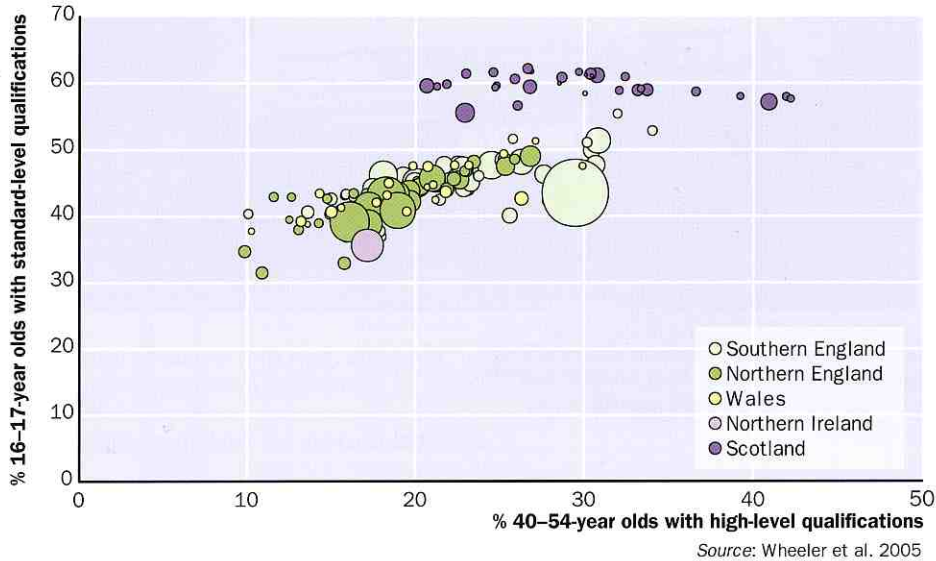


Figure 5 The relationship between the qualifications held by young people and people of their parents' generation, UK 2001





Scottish schools are better at taking young people from all social backgrounds and helping them to get good qualifications

background you have, reflected by the proportion of well-qualified adults in your area, still has an influence on your chances of getting qualifications.

What does this tell us?

Overall, the analyses show that the chances of success in school vary geographically. This variation is linked with the number of teachers and, apart from in Scotland, with the educational achievements of those who are of 'parent' age in each area.

Not getting educational qualifications has serious consequences for employment and income in adulthood. Success at school is also an important marker for a better chance of good health in later life. From society's point of view, education is expensive. It is also a vast investment of time by teachers and pupils. It used to be common for a young person to attend school for 11 years or so and to leave without any qualifications, but it is now a sign of educational neglect. If the chance of doing well at school depends on factors beyond the pupil's control, like the number of teachers available to teach them, or the achievements of their parents' generation, that does not seem very fair. The government expects all young people to work hard and achieve.

Don't you think they should be trying to do so on a somewhat more level playing field? Why do some areas, and some schools, have more teachers per pupil than others?

Questions to discuss or investigate

- (1) How might the daily commuting of teachers from where they live to where they work influence the results suggested here?
- (2) Does the same apply to pupils commuting to schools?
- (3) What factors may relate the average achievement of parents in an area to that of children? Do these factors help explain why there appears to be no such relationship in Scotland?
- (4) Are the suggestions that you make plausible, given the lack of a geographical relationship between the generations in Scotland?
- (5) What could be done to ensure a more level playing field in education?

References, further reading and resources

Data from the 2001 census are available on the internet from the National Statistics website: www.statistics.gov.uk/census2001/census2001.asp

You can also find census statistics for the area where you live by entering your postcode at: <http://neighbourhood.statistics.gov.uk> (this gives other statistics for your local area too).

The research project from which the material in this article comes is published as: Wheeler, B., Shaw, M., Mitchell, R. and Dorling, D. (2005) *Life in Britain: Using Millennial Census Data to Understand Poverty, Inequality and Place*, The Policy Press.

The authors are based at the Universities of Bristol, Edinburgh and Sheffield in departments of medicine and geography. They most recently collaborated on the report series Life in Britain for the Joseph Rowntree Foundation. The 'education' section of the series provided the basis for this article.

Key points

- The 2001 census can tell us a lot about where people with and without educational qualifications live. It can also tell us where the most important educational resources — teachers — are located.
- There is wide variation across the population of England and Wales in terms of the ratio of school-age children to teachers.
- Areas with the highest numbers of young people with no qualifications tend to have the fewest teachers — an 'inverse education law'.
- Across England, Wales and Northern Ireland, areas with a lot of young people with qualifications tend to also have a lot of highly qualified people around the age of their parents.
- This is not the case in Scotland, where the geographical distribution of qualified young people is more equal.