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The Effects of English School System Reforms (2002-2014) on Pupil Sorting and Social Segregation: A Greater Manchester Case Study

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Summary

The English secondary school system has been undergoing rapid change. 60% of secondary schools are now Academies. Opponents of these changes fear, among other things, greater social segregation, while supporters argue that Academies will raise standards for all, reducing inequalities. What actually unfolds will depend a lot on local arrangements and dynamics. This paper takes a close up look at the effects of the changes in four local authorities in Greater Manchester: Manchester, Salford, Trafford and Bury. In summary,

- The extent of academisation is widely different between areas. For example, Bury had no academies by 2014, while in Trafford, nearly 70% of secondary schools were Academy converters.
- There have been changes in segregation by Free School Meal (FSM) status since 2002, when there were no Academies. Intakes to secondary schools in Salford and Trafford became **more** segregated while in Bury they became **less** segregated. Manchester saw a decrease in segregation initially then an increase to previous levels.
- But these changes cannot be accounted for by changes in school types. Patterns are explained by wider demographic changes and by local factors such as schools opening and closing, or drawing from different geographical areas. In some cases neighbourhoods changed in their socio-economic composition.
- Changes to Ofsted inspection frameworks make it hard to say whether school quality overall improved in this period. In fact the data show an apparent polarisation with more high quality and more low quality schools.
- In all the years we looked at, children on FSM were less likely to be in the best schools in Greater Manchester and more likely to be in the worst, regardless of their prior attainment. These children were also more likely to be in the worst schools in their local authority area, so that even when school quality was generally high in an area, children on FSM were less likely to be in the most sought after schools.

These findings suggest that looking for broad-brush answers to questions about the effects of Academies are likely to be unproductive, since the effects of these system changes depend so much on local implementation and context. Perhaps more importantly, while it is important to understand the effects of Academies, policy-makers should not miss the 'elephant in the room' - the significant and persistent differences in opportunity that exist for students from poorer and richer homes and the other kinds of pupil sorting present in systems (e.g. by sex, academic ability or religious ethos).

1. Introduction

The period since 2002 and particularly since 2010 has been one of rapid reform to the structure of the English secondary school system, with the introduction of Academy schools (state-funded independent schools) alongside the existing community and faith schools. First, the Labour government introduced Academies to replace ‘failing’ schools in deprived urban areas. These new schools, often in new buildings, were sponsored by businesses and other organisations and thus came to be known as ‘Sponsored Academies’. The Conservative/Liberal Democrat Coalition government elected in 2010 instigated much more far reaching reform by allowing all schools to convert to Academy status voluntarily (without a sponsor)¹ and continuing to change ‘failing schools’ into Sponsored Academies. By 2015, around 61% of all secondary schools were Academies of some kind.

Our interest in this paper is on the effects of these reforms on social segregation in the school system – that is the extent to which children from poorer and richer homes are educated in different schools. Analysis of PISA data from 2000 and 2003 showed that England occupied a ‘middle-ranking position’ among OECD in terms of segregation but had very high parental involvement compared to other countries (Jenkins et al, 2008). Critics of the policy changes have been concerned, among other things, that the reforms would increase segregation since research tends to suggest that more differentiated school markets allow parents with the highest levels of financial, cultural and social resources to consistently secure places in the most highly rated schools (see, for example, see Gewirtz et al, 1995; Goldstein and Noden, 2003; Burgess et al, 2004). More recent evidence suggests that these concerns were founded for some of the early Academies. Eyles and Machin (2015) found that schools becoming Sponsored Academies before 2009 experienced statistically significant increases in their attainment standards at KS4 level but also statistically significant increases in the prior attainment of their pupil intake. These results were more prominent for community schools which became Academies.

It was also feared that, operating outside the local authority admissions system, Academies might also be able to find ways of admitting more advantaged children and excluding others, for example through their oversubscription criteria. Some recent evidence suggests that this is not happening to the extent expected. For example, Noden et al (2014) found that Academies (of all types) tend to use the same admissions criteria when they are oversubscribed as non-Academies and Gorard (2014) notes that although Labour’s new Academies were allowed to select up to 10 per cent of their intake on aptitude for a particular subject, in practice this did not increase segregation because most of the schools chosen for academisation had been taking in ‘more than their fair share’ of disadvantaged pupils and were usually undersubscribed. On the other hand, the Office of the Schools Adjudicator (the body responsible for processing complaints about admissions arrangements, hereafter abbreviated as OSA) reports that a large number of schools who are their own admissions authority (including VA and foundation schools) do not comply with the Admissions

¹ This process happened by degrees. For example, when the policy was first announced in 2010, schools had to be rated ‘good or outstanding’ to convert to academy status and only secondary schools were eligible. Over time, these conditions were relaxed to include schools rated less highly (though these schools had to be in partnership with other, highly rated schools) and primary schools, AP settings, PRUs and special schools.

Code (OSA Annual report; 2014, 2015). Data available from OSA shows that, in 2014/15, only 9 out of 102 cases where objections to admissions were upheld or partly upheld occurred in cases where the LA was the admissions authority.

In contrast, proponents of the reforms have argued that the increased autonomy and competition that Academies would bring to the school system would increase the quality of schooling, in Academy schools and others, thus increasing the access that poorer families have to good schools. This 'levelling up' of school quality might reduce the need for active school choosing, since as Bagley et al (2001) remind us, parents may be just as concerned with avoiding particular schools as they are with securing a place in others. Less active choosing might lead to reduced segregation. Furthermore, it may be argued that, in terms of academic attainments, segregation would matter rather less in a system in which all children have access to good schools than it would where children from low income homes are not only separated from their more advantaged peers but confined to lower quality schools.

Our goal in this paper is to provide further empirical evidence of the effects of the changes to the English school system by examining trends in social segregation both over the period following the introduction of Labour's Academies in 2002 and then since the introduction of the Coalition's Academies in 2010, thus providing an up-to-date view and comparing the two policy regimes. We also aim to contribute to understanding of how the effects of these reforms can best be measured.

The standard approach to this question in previous periods of reform has been to calculate national level segregation indices. Johnston, Poulsen and Forrest (2009) term this a 'pattern description' approach to segregation. The evidence from such studies to date is that segregation changed very little between 2002 and 2012 and that the changes that did occur were likely to be related to wider socio-economic changes rather than due to academisation (see Gorard et al, 2013; Gorard, 2014). Gorard (2014) argues that Academies, particularly converter Academies, tend to be in areas where there is already segregation rather than creating the segregation there. Studies have also demonstrated the importance of residential social segregation for levels of school segregation. Even in the secondary phase, most children tend not to travel very far to school – the median distance in 2015 was 1.14km and earlier work by Burgess et al (2006) showed that 72% of children attended one of their 3 nearest secondary schools. Thus although the situation varies across the country, school admissions tend to be substantially based on place of residence (Taylor and Gorard 2001), and differences between schools play a role in determining local house prices and processes of residential sorting (Gibbons, Machin, and Silva 2012). For this reason, changes to school type or quality alone would not necessarily have an effect on the sorting of pupils that might be expected if school choice operated over a wide area and regardless of transportation routes.

An ongoing debate in the 'pattern description' literature concerns the merits of different indices, a subject we revisit in this paper. (see, for example, Allen and Vignoles, 2007; Gorard, 2009; Allen et al, 2015 for examples pertaining to education in England). However there may be a bigger problem in relying on these analyses. Taylor (2009) has argued that much work on segregation at the national-level fails to account properly for local geographical factors, something which may be becoming increasingly important due to the extensive local variation in the ways that recent reforms have been implemented. As we show in Appendix Table 1, some local authority areas experienced drastic change under the first (Labour) wave of academisation, others during the second (Coalition),

some during both and others experienced hardly any change at all. These changes post-2002 have been layered upon existing differences in local school systems: selective grammars in some local authorities; the Grant Maintained schools introduced in 1988; and pre-existing and evolving patterns of single sex and faith school provision. Some of these types of schools were already operating with greater freedoms than community schools. In some cases, academisation has changed the composition of the school market in other ways (not just Academy vs non-Academy) by increasing the number of schools with a religious ethos and/or increasing the number of single-sex schools. In some areas, the number of schools overall has increased/decreased due to academisation whereas in other areas it has not, and many schools that have become Academies – particularly converter Academies – are operating in much the same way as before (e.g. with the same teaching and management staff, in the same buildings).

It is reasonable to assume, then, that the effects of academisation on local school markets will vary depending on these other features of local school systems. Other local dynamics will also be important, such as changes in pupil numbers, poverty rates, demographic composition, gentrification, mergers/closures and changing reputations of schools. In densely populated areas, patterns of social sorting in one local authority may well be affected by changes in the school system of another, for example when a nearby school in an adjacent authority increases its intake leading to cross-border flows of more advantaged families. Thus while national-level segregation indices may be calculated, these are only the sum of multiple local situations, and tell us nothing about the effects of academisation on the operation of local school markets, which is where effects on children are really felt.

Many of these local factors have been explored in what Johnson, Poulsen and Forrest (2009) described as ‘process description’ accounts, in which analysts are interested not just in the end result but in explaining what is causing segregation (or what is causing it to increase or decrease). By their nature, such accounts tend to be at the local scale and to illuminate local dynamics. They are often qualitative in approach and do not produce a definitive answer as to whether the extent of segregation has increased or decreased and by how much. It is rare to see pattern and process accounts in the same studies, making it difficult to reconcile the different pictures that they paint.

The approach we take in this paper is to work at the local rather than the national level and to study both the patterns of social segregation and some of the processes leading to these patterns. We look at four local authorities in Greater Manchester, chosen because of their geographical proximity and also because they have undergone different types of system change related to academisation. We examine their school systems at three time points: 2002 (before the first Academies), 2009 (before the Coalition’s Academies) and 2014 (the latest situation). We calculate social segregation indices, but we also examine in much more detail both the changing patterns of access to schools and some of the reasons for the changes observed (including academisation but also changes to school and pupil numbers, poverty levels, the quality and reputation of particular schools and cross border movements). We also assess, whether, social segregation notwithstanding, children from low income homes are more or less likely to attend ‘good schools’ as assessed by a number of different measures. We conclude by reflecting on the effects of these schools reforms in the four case study areas and also on the ways in which these can best be understood, in other areas and going forward.

The case study areas and the changes to the school systems there

The paper focuses on four local authority areas (LAs) in the Greater Manchester conurbation: Manchester, Salford, Trafford and Bury. Greater Manchester is of parochial interest to us as (current and former) University of Manchester researchers, and we limit our enquiry to four authorities simply for reasons of manageability in what has been a small scale exploratory study. The four authorities make up the 'spine' of the Greater Manchester conurbation (Figure 1). Manchester is the largest and had a secondary school population of 24,390 pupils and 25 secondary schools in 2014/15. Trafford had 16,515 pupils and 18 secondary schools in 2014/15 (DfE, 2015). Bury and Salford are smaller authorities and had 10,780 and 10,620 pupils respectively and 14 schools each in 2014/15 (DfE, 2015).

The four areas are selected because:

- a) They have very different school systems and they have experienced very different patterns of school change since 2002. Trafford for example, is one of very few authorities in the country to retain selective grammar schools, while Bury had no secondary Academy schools by 2014/15.
- b) There is some cross-border movement of pupils between these areas. While the area cannot really be considered a single school market (for example very few pupils move in either direction between Bury and Trafford), there is considerable cross boundary movement between neighbouring authorities.
- c) They differ in their socio-economic composition. For example, in Manchester and Salford have higher levels of socio-economic deprivation than Bury or Trafford. For example, the percentages of secondary children on Free School Meals (FSM) in Manchester and Salford were high in 2014/15 at 32.5% and 23.4% respectively (DfE, 2015). In Bury and Trafford, the percentages in 2014/15 were much lower (15.5% and 11.2% respectively) (DfE, 2015).

These are not the only ways the LAs in the study differ (e.g. the ethnic composition of the cohort is different in each place) but here we concentrate on the differences in socio-economic terms only². Comparing the position in 2002, 2009 and 2014, we first outline the changes to the school systems in the 4 areas. Then, we measure segregation and critically assess whether segregation indices are a useful tool in studies of complex school markets in small areas. Then, we explore processes of social sorting in and between these areas. We try to understand whether academisation or other, more local changes, are responsible for any changes to the sorting processes that we observe. Finally, we show whether disadvantaged children are more or less likely to be in high quality schools and the best schools locally.

2. Changes to School Systems in the four areas

We are concerned throughout with social sorting and segregation in the state school system and so focus on the state school market in each LA. Overall at the start of the period under study (2002), there were 69 state schools in the area as a whole and almost half (46%) of these were Community Schools. Of the 69 schools, 16 per cent were single sex schools, 29 per cent were religious ethos

² See Byrne and De Tona (2012) for an examination of the impacts on migration on school choice in Manchester.

schools and 10 per cent were academically-selective (grammar) schools. Some schools had more than one of these features (e.g. academically-selective and single-sex) and so, even at the local authority level, it is not true that children have an equal chance of attending any school.

In 2002, Bury was the least differentiated system as most schools there were Community Schools (11 out of 14) and only 3 schools there were schools with a religious ethos (all Voluntary Aided (VA) schools). Single-sex education in Bury at that time was only available in the Independent Sector from 4 single-sex, Independent Schools. Salford had a similar system to Bury in 2002 but with slightly more differentiation in it. It had the same overall school numbers as Bury but 9 of these were Community Schools with the other 5 being religious-ethos, VA schools. As in Bury, there were no single-sex state schools in Salford in 2002 but there were 10 Independent schools - most of which provided single-sex education with a Jewish ethos. The existence of this large Independent sector offering very specialised provision suggests that there was an extra layer of (unmeasurable) segregation in Salford in 2002 between those in the Independent sector and those in the State sector. In Manchester, the state school system in 2002 was more differentiated than either Bury or Salford with around a third of state schools having a religious ethos and around a fifth being single-sex. In Manchester, around half the schools were Community Schools (12 out of 23) and the others were VA Schools (8) or Foundation (3). In addition, Manchester had 14 Independent Schools – three of them nationally renowned large, high performing, single sex schools and many of the remainder offered education with a religious ethos. Trafford's state system was the most differentiated containing schools which were single-sex, academically-selective, or had a religious ethos (and some schools with combinations of these characteristics). Most schools there were Foundation Schools (13 of the 18) and only one was a Community school with the remaining 4 schools having VA status. Of our 4 areas, Trafford had the highest percentage of single-sex state schools in 2002 (6 out of 18) but the lowest percentage of religious ethos schools (4 out of 18). Perhaps because of its academically-selective state system or proximity to Manchester's large, highly-rated Independent sector, Trafford had a very small Independent sector in 2002 with only 3 small Independent Schools.

The impact of Labour's school system reforms by 2009 was relatively modest in the country as a whole but more striking in some of the parts of Greater Manchester we examine here. Overall school numbers in the 4 LAs rose by two and eight sponsored Academies opened – predominately replacing Community Schools. These numbers obscure a slightly more complex picture of school closures, mergers, and the introduction of three former independent schools into the state sector. However, the key point for our purposes is the variation between authorities. Neither Bury nor Trafford introduced any Academies, and the school system in Trafford did not change at all in this period. Salford opened two sponsored Academies, both replacing 'failing' schools. The largest change took place in Manchester where six Sponsored Academies opened– meaning that around a third of the schools in Manchester were of this type by 2009. Manchester's Academies were co-sponsored by the City Council and intended to cover a range of specialisms. This approach, known as the Manchester Model, was unusual as it involved a level of coordination from local government. Most of the new Academies in Manchester replaced Community Schools but one was formerly an Independent School. As a result, the number of Community Schools in Manchester dropped from 12 to 7 but the overall number of state schools increased by 1.

Figure 1: Map of Greater Manchester Schools in 2002

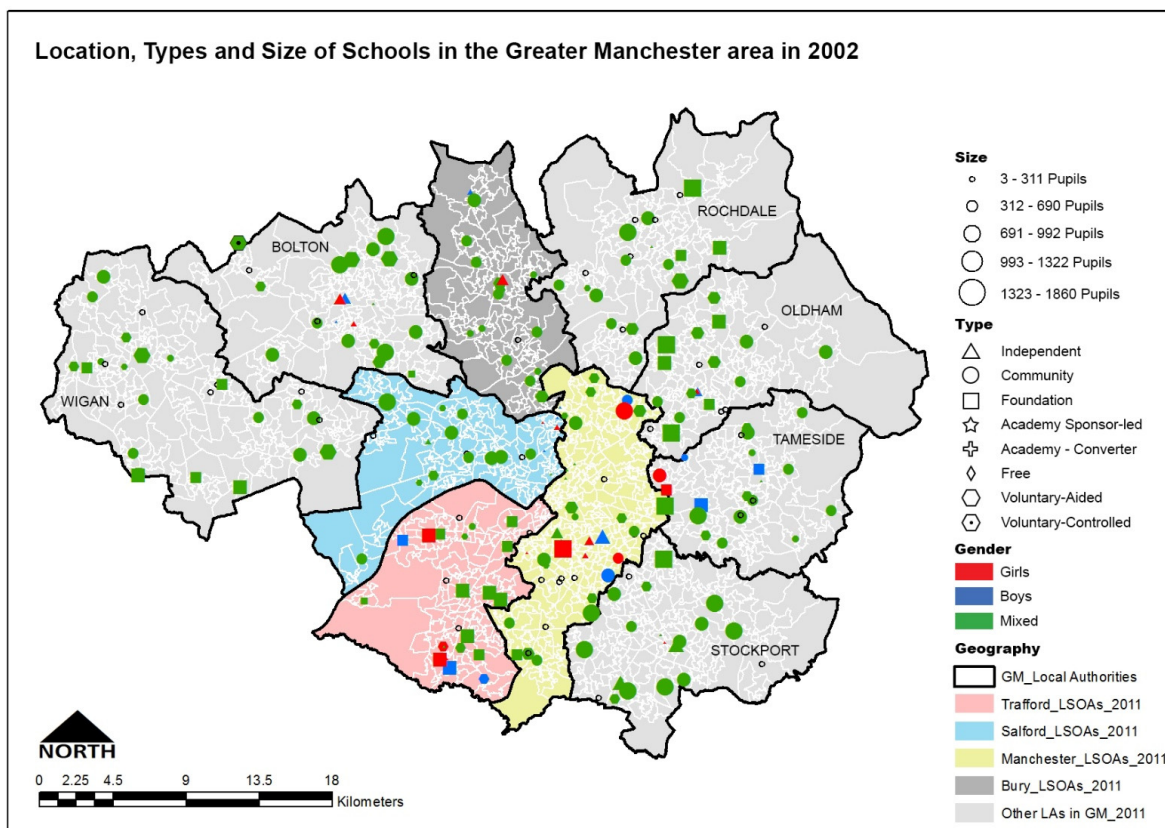
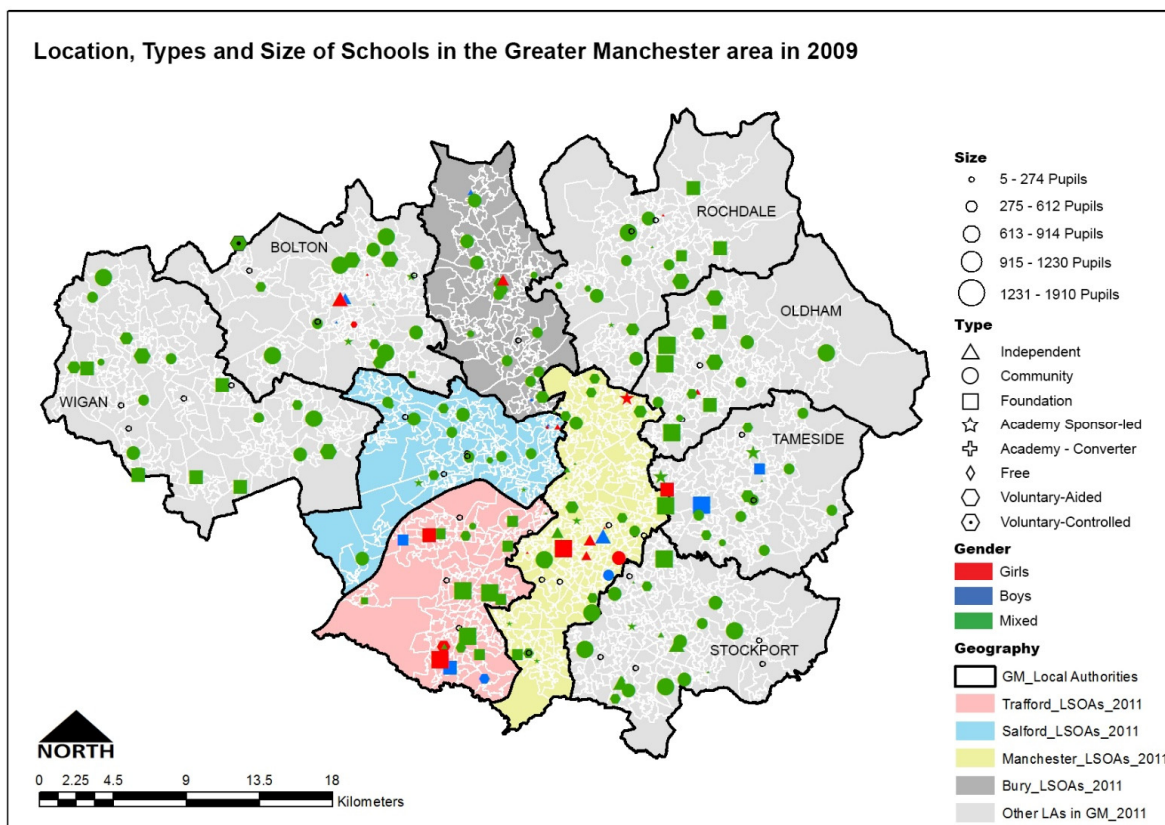


Figure 2: Map of Greater Manchester Schools in 2009

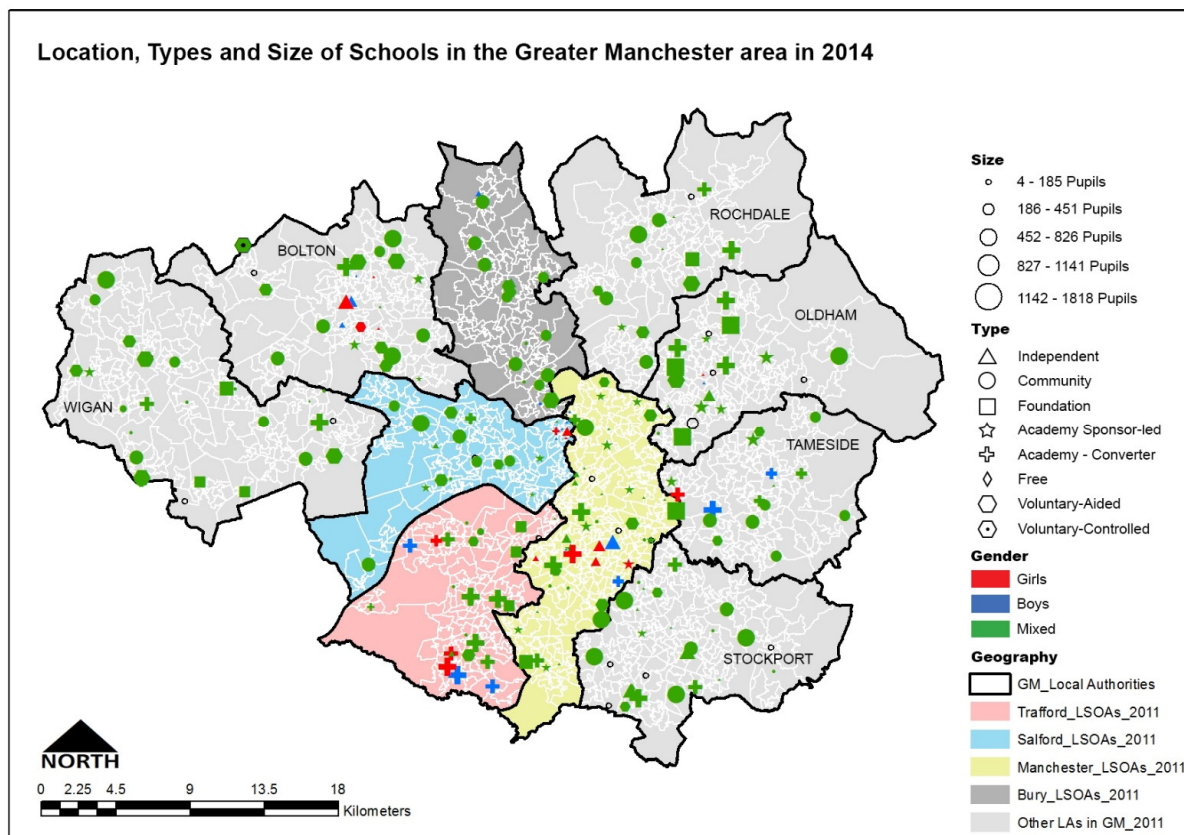


By 2014, under the Coalition, there had been much more substantial and widespread system change. In the whole area, a further 5 Sponsored Academies had opened and 20 schools became Converter Academies. Academies (of either type) made up 46 per cent of the schools overall, and community schools just 26 per cent.

Again, the four authorities experienced the changes very differently. In Bury, again, no Academies opened. In Salford there was continued change towards an academised system, with two schools becoming Converter Academies and a further 1 school becoming a Sponsored Academy by 2014. This meant that, by 2014, one third of schools in Salford were Academies.

Manchester saw even more change, with a further 5 sponsored Academies (2 of them entirely new schools), and six converter Academies opening. All of this change reduced the number of Community Schools in Manchester to just 2. Trafford saw perhaps the greatest change in this period, with 12 of its 18 schools becoming Converter Academies. Trafford also experienced no other system change (e.g. mergers or closures) between 2002 and 2014 and so could be described as the system, in our study, with the most stability over time. In our area of study, no Free Schools that accepted year 7 pupils had opened by 2014.

Figure 3: Map of Schools in Greater Manchester in 2014

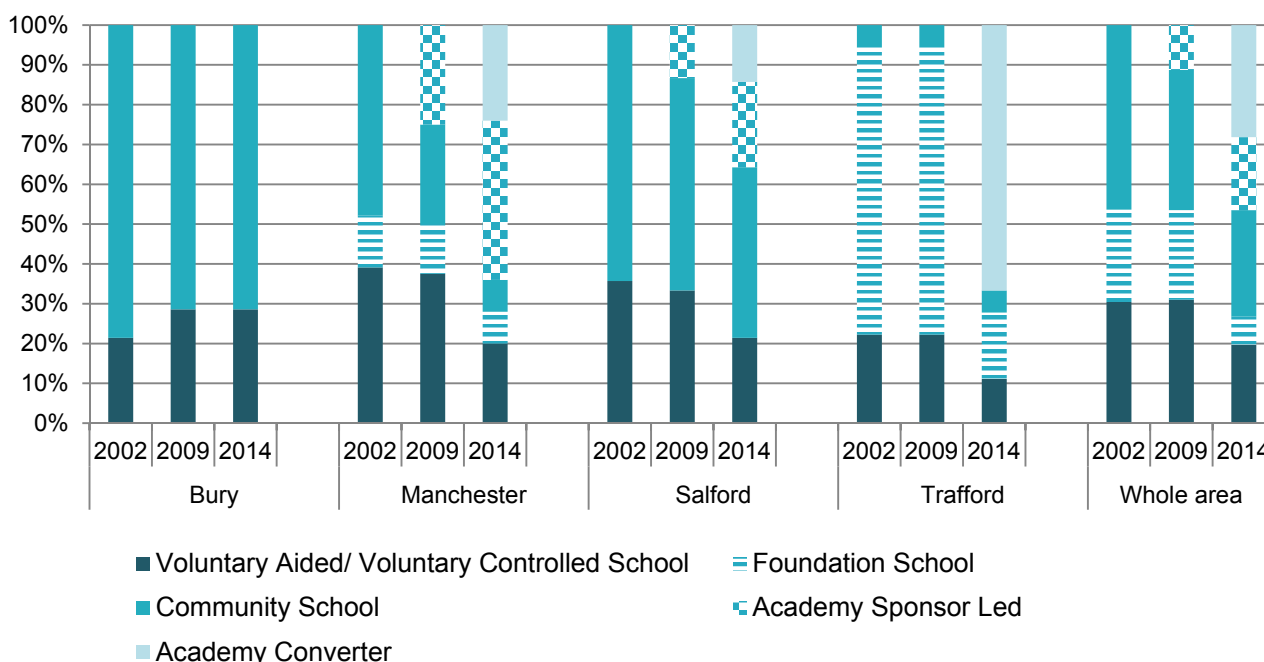


In summary, then the four LAs represent:

- A system unaffected by the Academies policies under Labour and the Coalition by 2014 (Bury)
- Two systems with a mixture of Sponsored and Converter Academies (Salford and Manchester), with these changes being much more pronounced in Manchester
- A selective school system of grammars and secondary moderns, predominantly Foundation or VA schools, many of which have become converter Academies by 2014 (Trafford).

These changes are summarised in Figure 4 which shows the percentage of schools of each type in the 4 LAs and the whole area in 2002, 2009 and 2014.

Figure 4: Summary of changes to school type



3. Changes to Segregation as Measured by Segregation Indices

The first question that we explore is whether the extent of socio-economic segregation in the school systems of the four local authorities changed in the periods under observation, by calculating indices of segregation. For our study, we look at segregation in the Year 7 cohort only.

The debate around the merits of various segregation indices, as noted earlier, is extensive and not one we will enter into here in any detail. Massey and Denton (1988) suggest that the concept of segregation is itself multi-faceted and contains five primary dimensions: “evenness, exposure, concentration, centralization, and clustering”. As such, a fuller study of segregation would require use of several indices to measure each of the dimensions of segregation. Most of the work on school segregation in the English context has considered measures of ‘evenness’ - using the index of dissimilarity (D) and/or Gorard’s Segregation Index (GS).

Looking at segregation by poverty and using Free School Meals (FSM) status as an indicator of poverty, both D and GS measure how evenly spread (or not) children on FSM are with respect to the non-FSM children (D) or the total population (GS)³.

Formally, we calculate D as follows:

$$D \text{ (by FSM)} = 0.5 * (\sum |F_i/F - N_i/N|)$$

Where:

F_i is the number of children in school, i , on FSM

N_i is the total number of children in school, i , not on FSM

F is the total number of children in the chosen area, on FSM

N is the total number of children in the chosen area, not on FSM

Similarly, we calculate GS as:

$$GS \text{ (by FSM)} = 0.5 * (\sum |F_i/F - T_i/T|)$$

Where:

F_i is the number of children in school, i , on FSM

T_i is the total number of children in school, i

F is the total number of children in the chosen area, on FSM

T is the total number of children in the chosen area,

from Gorard (2009).

For our areas of interest, the results of these calculations are shown below in Table 1.

Table 1: Segregation Indices by Area, 2002 – 2014

	Bury		Manchester		Salford		Trafford	
	GS	D	GS	D	GS	D	GS	D
2002	0.250	0.289	0.127	0.221	0.227	0.309	0.283	0.336
2009	0.256	0.303	0.112	0.198	0.263	0.341	0.375	0.423
2014	0.222	0.257	0.128	0.218	0.243	0.323	0.340	0.385

In Table 1, we see that segregation levels varied in the four areas at each time point. Trafford is the most segregated at each time point and Manchester is the least segregated. In addition, we can see that Bury, Salford and Trafford have different patterns of change over time from those in Manchester. In Bury, Salford and Trafford, segregation increased between 2002 and 2009 before falling again. Within these 3 areas, Trafford experiences the most change with a large jump in the segregation levels between 2002 and 2009. Only in Bury does segregation end up lower in 2014 than it was in 2002. Manchester's segregation levels, by contrast, fell between 2002 and 2009 before rising again by 2014 to almost the same level they were in 2002. The changes in these indicators seem unrelated to the changes in the school systems described earlier. For example, segregation increased slightly in Bury before decreasing again despite there being no academisation there. In Trafford, between 2002 and 2009, the school system does not change at all but segregation rose sharply there.

³ Both measures track each other when measured over time (see Gorard, 2009)

It is also clear, however, that some of the changes to the indices are very small over time. Both the D and GS index are susceptible to the changing sizes of subgroups/populations. This means that a more basic change to the area (such as an increase in pupil numbers overall or of one type) may make it appear as though an increase or decrease in segregation has occurred⁴. This is particularly problematic for a situation like ours where we examine discrete time points rather than a string of successive years. These arguments have been well made before by those who call for a modelling approach to studying segregation (e.g. Goldstein and Noden, 2003; Allen et al, 2015).

Part of the problem with using segregation indices in a school context to study differences between areas and change over time is that the number of schools in different areas (here, LAs) is different and school numbers within areas are not static over time. When segregation indices are used in geography, this is usually not a problem as the number of units over which the calculation is performed is fixed. Therefore, any changes in the indices do reflect shifts in the distributions of pupils. When schools are the unit and the number of schools changes, the change in the index value may be entirely due to changes in school numbers.

In addition, although - in theory - both D and GS can take on values between 0 and 1, in reality they both have limits to the maximum value they could take depending on the number of pupils and schools in an area and the size of schools. Thus, in real situations the highest value they can take is likely to be less than 1 and this information is not contained in the index itself. For example, we may compare two areas and find that Area 1 has a higher score on D than Area 2 and in a basic sense this would tell us that the minority group in Area 1 is less evenly spread than in Area 2. If, however, Area 1 had only 2 schools and a low minority population – all of which attended one of the schools – and Area 2 had a large minority population and many, small schools then the segregation scores are in large part the direct result of the structure of the school systems in the two areas. In our work, an area such as Manchester which has large numbers of pupils on FSM has the potential to be less segregated than an area with fewer pupils on FSM. Whilst this may seem obvious, the implication is that, when we compare segregation indices of two areas, we do not know how much of the potential segregation in each has been realised. For example, looking at Table 1 we can see that the GS score for Manchester in 2002 was 0.127 but suppose we assume a situation where the number of pupils on FSM in that year were clustered in the minimum number of schools⁵.

This produces a situation where all the pupils on FSM are distributed between 7 of the 23 schools there producing a GS of 0.569. If we perform a similar exercise for Trafford in 2002, the maximum GS possible is 0.817. So, in 2002, it was not possible for Manchester to be as segregated as Trafford – given the school numbers and the populations living there. As this information is concealed in the measures themselves, it can be difficult to compare areas with similar scores. In Table 1 we see that Salford and Bury have fairly similar scores for D and GS at each time point. Taking the year 2002 and the GS scores as an example again, however, if we calculate the maximum possible score for each we see that Salford's maximum GS score is 0.698 whilst Bury's is higher at 0.813. Given this

⁴ Users of these indices may argue, however, that these changes to subgroups and populations do inevitably lead to changes in segregation which are picked up by changes in the indices.

⁵ A further working assumption for this calculation is that the total number of pupils for each school is fixed. This may, of course, not be true but as this calculation distributes the FSM pupils among the biggest schools until there are none, it is reasonable to assume that those schools with the largest year 7 intakes are those close to or at full capacity.

additional information, we might say that the situation in Bury in 2002 was more promising despite its higher GS score because Bury was only 28% as segregated as it could have been whereas Salford was 33% as segregated as it could have been.

Finally, we suggest that measuring evenness (as both D and GS do) implies that there is some ideal situation where children are equally spread throughout a defined area. In Gorard's work, he interprets the GS scores as representing the proportion of children who would have to switch places for there to be no segregation. It is not clear at what organisational level this principle could (or should) apply. Certainly, it is possible that a national-level trend over time could display a different trajectory to that in the comprising LAs but even if we focus on the LA-level only, there is an assumption in studies of evenness that a child could theoretically attend any school within the LA. As discussed earlier, this is not a practical assumption since we know that children cannot, for geographical and other reasons (such as school selection policies), attend any school in their LA. We also know, from our investigations of residential segregation at the LA level (not shown) that segregation levels in schools are largely a reflection of residential segregation. In our particular example, a city with good transportation routes, we also know that children travel across LA boundaries to go to school – sometimes, though not always, because their nearest secondary school is actually in another authority.

For these reasons, we consider segregation indices to be unhelpful in our attempt to understand how system change has changed school compositions over time in Greater Manchester. Instead, we track cohorts of children from year 6 to year 7 at the school level to see if the destinations of children from discrete areas within LAs have changed over time and if this has changed the compositions of the areas' schools.

4. Changes to Patterns of Pupil Destinations

As mentioned above, we examined which schools children went to school for year 7 – focussing only those schools in the 4 LAs of interest. We selected the cohort of children in year 6 and then examined their destination school for year 7. We had some further information about the children including their FSM status in year 6 and where they lived (at the LSOA level).

From this, we can answer some particular questions. Namely,

- 1) Did schools take in the same types of pupils as previously? (by FSM status of pupils and IDACI⁶ rank of area)
- 2) Did schools take in pupils from the same geographical areas as previously?
- 3) What effects did changes for one school have on others? (we present some examples)

⁶ The Income Deprivation Affecting Children Index (IDACI) rank is calculated for all Lower Layer Super Output Areas (LSOAs) in England. An LSOA is an area with around 1000 occupants and the rank shows how many children in the LSOA live in income deprived families (those living with below 60% of the median national income before housing costs) relative to other LSOAs. We use this in addition to a measure of Free School Meals as it indicates the relative poverty of the area and includes those in in-work poverty.

For this exercise, we also treated Academies as future incarnations of their predecessor schools for the purpose of comparison over time⁷. All school names mentioned in the report refer to the most recent name of that school (for simplicity) even if the data described is for the predecessor school.

Some general observations

Table 2 below shows the change in year 7 cohort size, school numbers and percentage FSM in each of the four LAs over the time points we consider. We take this as a starting point and notice that most areas saw a decline in their FSM percentage in the year 7 cohort over time. Bury is the only area where the percentage of pupils on FSM increased slightly and Manchester saw a substantial decrease in its FSM percentage between 2002 and 2014.

Table 2: Year 7 cohort size, percentage FSM and number of schools, by year

	2002/3			2009/10			2014/15		
	cohort size	% FSM	No of schools	cohort size	% FSM	No of schools	cohort size	% FSM	No of schools
Bury	2,095	13.4	14	1,910	15.3	14	1,903	13.9	13
Manchester	3,970	42.4	23	3,551	38.1	24	4,702	27.6	26
Salford	2,139	26.7	14	1,859	25.2	15	1,760	24.6	14
Trafford	2,398	15.5	18	2,479	11.5	18	2,419	11.8	18

What this general overview cannot show, however, is whether these changes in the percentage of children on FSM are indicative of a trend in all small areas (such as LSOAs) or conceal larger increases or decreases in poverty in certain places.

1) Are schools taking in the same types of pupils as previously? (by FSM status of pupils and IDACI rank of area)

Appendix 2 shows the FSM percentages over time for each school in these 4 LAs. Some general findings from that table are:

- Almost all schools in Manchester had a lower % FSM in the Year 7 intake in 2014 than in 2002
- Most schools in Trafford had a lower % FSM in the Year 7 intake in 2014 than in 2003 but with some notable exceptions such as Lostock College and Sale High School
- In Bury, some schools had a higher % FSM in the Year 7 intake in 2014 than in 2003 and a similar number had a lower % FSM in the Year 7 intake in 2014 than in 2002
- Most schools in Salford had a similar % FSM in the Year 7 intake in 2014 compared to 2002 but with some notable exceptions such as All Hallows RC High School (much lower) and Harrop Fold School (much higher)

⁷ Academies are considered new schools by the Department for Education and those schools they 'replace' are considered to have closed down. This administrative distinction does not take into account that many academies are simply continuations of predecessor schools or that schools often remain on the same site, even if they have been taken over by a sponsor. We are interested here in whether these changes affect school intake and so compare the intakes of new academies to predecessor schools as though the school had been open continuously throughout the period.

Taken together, Table 2 and Appendix 2 suggest that there may have been some changes to demographics in the areas schools drew pupils from or that schools may have drawn pupils from different areas than previously.

We can check this explicitly by looking, first, at what kinds of areas schools drew pupils from in each of the years. In Appendix 3, we show the average IDACI ranking for each school's year 7 intake. This provides us with a useful rough indication of whether any schools seem to have pupils from more economically advantaged areas than previously. In general, from Appendix 3, we see that:

- Most schools in Manchester had a similar average IDACI rank in all years with Chorlton High School the only one with any large change (the average rank increased some 2000 places by 2014, indicating that students were in more economically advantaged areas than previously)
- Most schools in Trafford had similar or slightly higher average IDACI ranks over time with only Wellington School and Altrincham College of Arts experiencing larger increases – indicating that these schools were taking in students from more economically advantaged areas than previously
- Schools in Bury had similar average IDACI ranks at each time point
- Most schools in Salford had similar average IDACI ranks at each time point except for Walkden High School which experienced a large drop in IDACI rank (by around 5000 places, indicating that students were in more economically disadvantaged areas than previously)

Taking all this information together, we can already see that some schools had very different types of students from different types of areas in their intakes over time. What we are still unable to say, at this point, is whether the areas around schools changed or whether schools themselves took pupils from different areas than previously. In the next subsection, we examine directly which areas schools drew pupils from to see if this has changed over time.

2) Did schools take in pupils from the same geographical areas as previously?

We first looked at the 'reach' of each school by counting the number of areas from which a school drew pupils in each year⁸. Instead of looking at the LSOA level, we used a larger geographical area – the MSOA – as this gives a better picture of coherent communities whereas an LSOA may only cover a single street. In addition, we exclude any MSOAs from a school's reach if only one pupil from that MSOA attended the school. Appendix 4 shows the number of MSOAs from which students were drawn for each school in our 4 LAs at each time point. As before, this is just a summary measure to inform us whether any schools had large increases/decreases in their reach. We count any MSOA with more than 1 pupil and so we cannot interpret small changes in MSOA numbers as being worth comment. Nevertheless, from Appendix 4, it is clear that some schools had large changes in their reach over the 3 years. Most of these schools saw an increase in 'reach' and were drawing pupils from more areas than previously but some (such as Abraham Moss Community School and St Patrick's RC High School) experienced a decrease in their reach. This suggests that residential sorting of pupils may have weakened in some areas and increased in others.

⁸ Another approach would be to model what Harris et al (2015) term the 'core catchment area' for each school and examine changes to these over time.

We also looked at this from the other direction to see whether the number of schools attended by pupils in each MSOA had changed. Again, this only offers a summary but should help us to understand whether residential sorting into schools changed over this period. Appendix 5 shows the number of schools attended by pupils from each MSOA in Bury, Manchester, Salford and Trafford. We can see that some areas experienced a large increase in the number of schools attended whilst others saw a decrease. It is difficult to determine overall whether residential segregation increased or decreased but what Appendix 4 & Appendix 5 do show is that the processes of residential sorting are subject to change over time. We tend to think of residential sorting as being a fixed set of processes because the location of schools does not change much over time but this evidence shows that this is not the case – at least not for these areas and time periods.

We can now investigate in more detail if schools are drawing pupils from different areas than previously. We examined, for each school at each time point, the numbers of pupils attending by MSOA and FSM status. For some schools in our sample, there is clear evidence that the areas from which they draw pupils has changed and this has happened in conjunction with changes to the intake areas of other, neighbouring schools. In some cases, this explains the changes we have seen earlier in the %FSM and IDACI averages for some schools. In other cases, the %FSM and IDACI averages appear similar over time but this actually conceals changes to the intake areas for these schools. We offer some particular examples below to illustrate these points.

3) What effects do changes for one school have on others?

The particular examples below show the effects that changes to the intake of one school have had on others in the vicinity. Maps in Appendix 6 show each situation spatially.

Our Lady RC Sports College, Manchester

This school experienced a decrease in the percentage of children on FSM over time but an increase in the numbers of children from economically disadvantaged areas (shown by a decrease in the IDACI average). By 2014, the school took fewer pupils from the MSOAs Manchester 001, Manchester 004, Manchester 010/ Manchester 056 than previously. For Manchester 001, this can be explained by the smaller cohort of year 7 children living there by 2014. In neighbouring Manchester 004, however, more children were attending Abraham Moss Community School by 2014 instead. In 2012, a new academy school, Manchester Communication Academy, opened and this school drew pupils from Manchester 010/ Manchester 056. There do not appear to be any large increases in numbers of pupils coming from other areas – which is shown by the decrease in overall year 7 numbers attending this school by 2014.

Chorlton High School, Manchester

This school experienced a decrease in the percentage of children on FSM and an increase in the numbers of children from economically advantaged areas. By 2014, this school took more pupils from Manchester 033 but there was a larger cohort of year 7 pupils from that area than in previous years. Other than this, the intake areas have not changed and so we can conclude that the areas in the school's reach have undergone economic change which in turn has affected the intake of the school.

Altrincham College of Arts, Trafford

This school experienced changes both up and down in its % FSM over the period we examine but a large increase in the average IDACI ranking suggesting that more children from economically advantaged areas attended there in 2014 than previously. The particular intake areas for this school have changed and the school took fewer pupils from Manchester 047 and more from Trafford 014, Trafford 015, Trafford 018 and Trafford 022. The decrease in pupils from Manchester 047 can be attributed to their being fewer year 7 pupils there in 2014 than previously. The extra pupils from Trafford, however, have had knock-on effects for the intakes of Sale High School and Wellington School. By 2014, fewer pupils from Trafford 014, Trafford 015, Trafford 018 attended Sale High School and fewer pupils from Trafford 022 attended Wellington School.

Sale High School, Trafford

This school experienced a small increase (around 5pp) in its % FSM but little change in its average IDACI rank. These changes masked a change in the intake areas for this school, however, as the number of MSOAs from which it drew pupils increased from 24 to 28 and, by 2014, it took very small numbers of students from each MSOA. It experienced an overall decrease in numbers from most MSOAs but took similar numbers of FSM children from each of its MSOAs. This, then, explains the increased percentage FSM at this school over the years we examined.

Walkden High School, Salford

This school saw an increase in its % FSM and a decrease in its average IDACI rank suggesting strongly that the pupils attending there in 2014 were from more economically disadvantaged areas/homes than previously. Though this school takes most of its intake from within Salford, the areas in Salford from which it drew pupils has changed. By 2014, it took fewer pupils from Salford 001, Salford 002, Salford 003 and Salford 004 and more from Salford 007, Salford 013 and Salford 014. The closure of another local school, St George's RC High School, increased the numbers of pupils attending Walkden High School from Salford 001, Salford 002 and Salford 004. By 2014, there were fewer year 7 pupils overall in Salford 007 and Salford 014 but pupils from the other areas of this schools reach were attending different schools. In general, the areas from which Walkden gained pupils had slightly more pupils on FSM than the areas from which they lost pupils. This suggests that a combination of demographic change, changes in parent choice and school closures have changed the intake of this school.

Harrop Fold School, Salford

This school also saw an increase in its % FSM and a decrease in its average IDACI rank which suggests that the pupils who attended there in 2014 were from more economically disadvantaged areas/homes than previously. This school generally took pupils from the same areas as previously but took fewer children overall than it used to. It took in similar numbers of FSM children, however, which led to the increases in the % FSM. Unlike Sale High School, which experienced a similar situation, this school did not increase its reach and so had far fewer pupils than previously as a result.

The above examples show that school closures, new schools opening and general demographic change have affected the processes of sorting to these schools. There is no evidence of a general

'Academies effect' here – rather evidence of particular local effects. In the next section, we consider whether these changes to the processes of pupil sorting have led to more or fewer FSM pupils being in schools considered of high quality.

5. School Quality

In the previous section, we saw that the intakes of some schools had changed in composition over time. Sometimes this was as a result of general population changes but, in other cases, there was evidence of changes in pupil flows. In this section, we explore whether these changes have led to FSM children attending higher quality schools. As discussed earlier, previous research suggests that socially mixed schools have societal benefits and organisational benefits, as well as some beneficial effects for lower attaining pupils, so less social sorting could be regarded as a good thing in its own right. However, one might be less concerned about this if the standard of school attended by pupils from different social groups was very similar. It is this that we investigate in the following section.

Determining School Quality

To examine this we look, in absolute terms, at whether children eligible for FSM were attending better schools by 2014 than previously. We then examine, by considering the local ranking of schools, whether FSM children were attending the best schools locally and whether this has changed over time. To categorise schools in terms of their quality, we created a composite indicator in each year from a combination of raw results at KS4 (end of secondary school) and Ofsted inspection rating.

To create this composite measure, first we classified schools on the basis of their results at KS4 (where possible). The KS4 results were placed into bands – labelled A, B, C and D – to indicate the school's results relative to the floor standard for overall attainment⁹, national average and an upper threshold value deemed to indicate very high attainment¹⁰. Schools in band A had results above this upper threshold value which indicates that their results are among some of the best nationally. Schools in band B had results above (or equal to) the national average but lower than this threshold value – indicating that they were in the top half of the distribution of results nationally but not among the very best performing schools. Schools in band C had results below the national average but higher than the floor standard for KS4 – indicating that they were performing less well than most schools, on average, but not at a level deemed to cause concern. Schools in band D had results at or below the floor standard for KS4 which indicates that they are among the lowest performing schools in the country. As a results indicator, we used 5A*-C until 2005 and 5A*-C with English and Maths from 2006 onwards to be consistent with how results were measured by central government. We set the upper threshold for years with 5A*-C as an indicator to 80% and to 70% for years with 5A*-C with English and Maths. Over this period, the floor standard also changes – starting at 20% and rising to 40% by 2014.

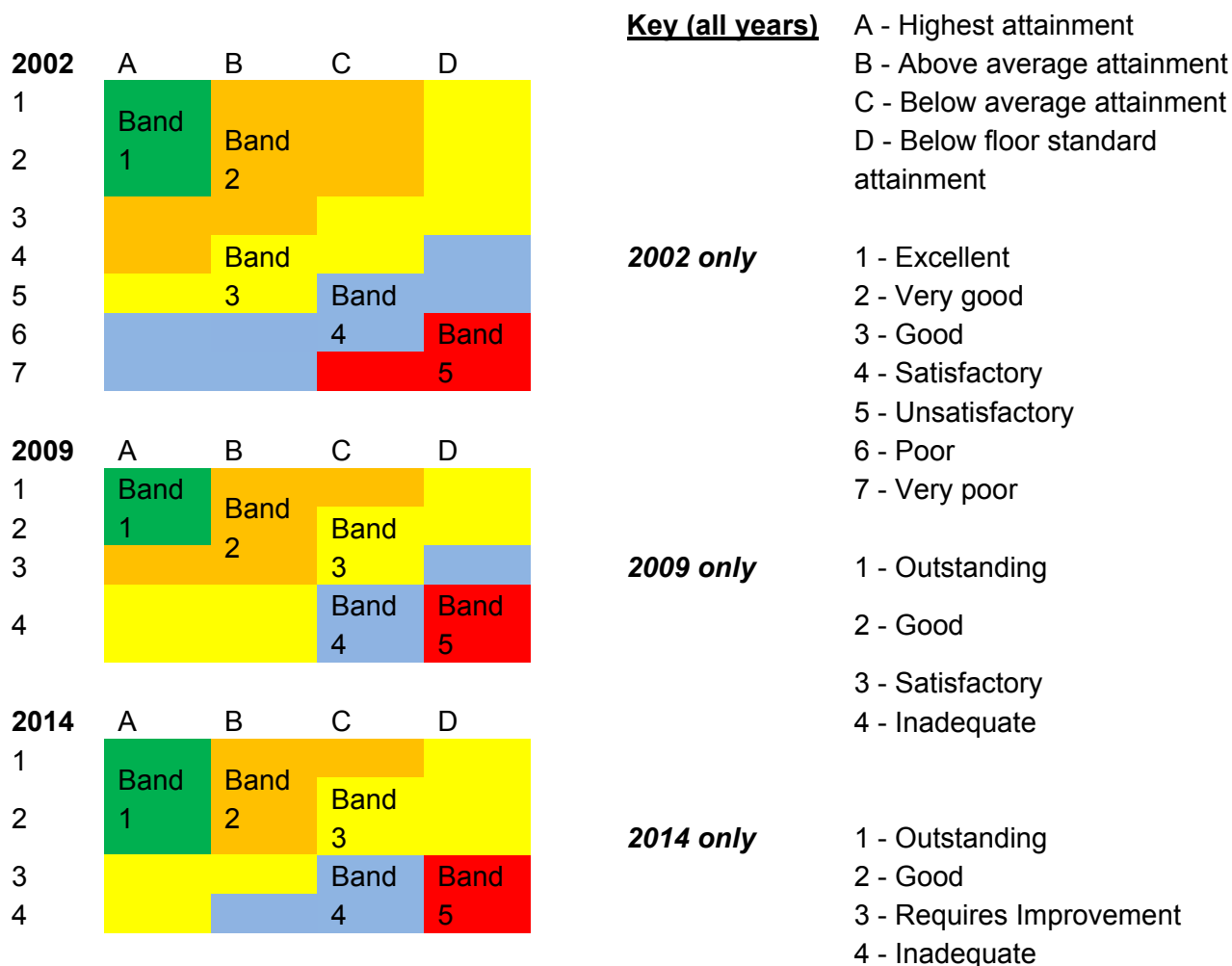
⁹ Schools below the floor standard (which is not static over time) are those with a lower percentage of children attaining at a particular level than the government deems acceptable. There is an expected level for attainment overall (which we use here) and also levels for particular subjects such as English and Maths (which we have not accounted for) and schools deemed to be below the floor standard would have results lower than the acceptable standard in all indicators. Therefore, schools with overall attainment levels below the floor standard in our sample may not be officially recognised as being below the floor standard in any one year.

¹⁰ We also change this upper threshold as the floor standard changes. Very few schools have results on the boundary measure and so, if the thresholds were slightly different, very few schools would change band.

Second, we collected Ofsted judgements for all the schools in the 4 LAs between 2002 and 2014 (where possible). As these inspections are not yearly, we considered a school to retain the grade from its last inspection until it is re-inspected. Ofsted grades have also changed over this period: reducing in number from 7 (before 2005) to 4 and with grade 3 changing meaning (after 2013) from 'Satisfactory' to 'Requires Improvement'. Also during this period, in September 2009, the Ofsted inspection framework changed leading to schools with lower grades being re-inspected more frequently than those with higher grades. This means that some schools in our sample have been inspected much more frequently than others and some schools will have more 'up-to-date' Ofsted judgements at each of the time points than others. Another aspect of the Ofsted framework change in 2013 was the increased focus on the most disadvantaged pupils (as measured by uptake of Pupil Premium). Schools could be downgraded under these changes if their Pupil Premium eligible children were adjudged to be progressing more slowly than other children. Some schools in our sample have not been inspected since these changes were introduced (primarily because they hold an 'Outstanding' or 'Good' previous judgement).

In our categorisation, at each time point, all the sample secondary schools will have a code with a letter to indicate their results and a number to indicate their Ofsted grade. Classifying schools in this way for each time point will give some idea of the improvements in school quality over time for each LA (and the whole area). Since the possible number of school types under this classification is large (especially in 2002), we further group schools into 5 broader types. This is to aid comparison by area but also to account for the different elements of school quality. Figure 5 shows how these types correspond to the original classifications for each year. Note that the classifications for 2009 and 2014 are very similar but not identical. This is to account for the changes to the Ofsted grade 3 in 2013 which became 'Requires Improvement' from 'Satisfactory'. Figure 5 shows that, for all the years, the middle bands for school quality are more heterogeneous and, as we see later, this means that these (i.e. bands 2-4) contain higher numbers of schools. Using this categorisation, we then calculated the probability of FSM, non-FSM and all pupils being in each of these types of schools at the different time points.

Figure 5: Classification of School Categories into 5 bands



This objective way of classifying schools may obscure changes to the relative rank of schools in the areas we examine. For example, all schools may have improved equally but the worst school locally in 2002 may still be the worst school locally in 2014. Thus, FSM children in this school will have been in a better school in 2014 but still not the best school in the area. To examine this, we ranked schools in the whole area (the 4 LAs combined) and in each LA based on their results and Ofsted gradings at each time point. We then selected the top and bottom 20% of schools and calculated the odds of FSM children being in these schools¹¹.

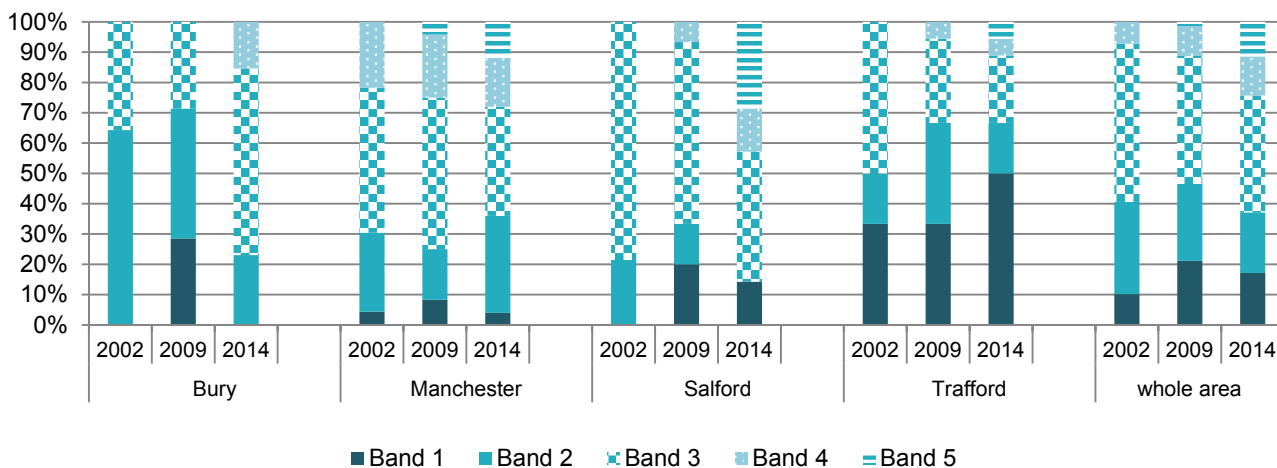
This classification is far from a perfect exercise but we have included both an indicator of results and Ofsted as both of these school-indicators are published and used by parents to inform school choices. Using results alone can obscure the school context and looking at Ofsted alone may not distinguish between schools with consistently differing levels of attainment. We have made efforts to ensure

¹¹ Sometimes, there were several schools with the same classification and therefore it was not always possible to select the top and bottom 20% of schools exactly. For example, a group of six schools in Trafford had the same classification in 2002 but we intended to label 4 schools as being in the top 20%. In this situation, we choose the schools with the largest intake.

that our overall classification does not produce a misleading picture of change over time but, as Ofsted and results indicators have changed over this period, this is always a possibility.

The results of applying our classification of school quality to the schools in these four authorities are shown in Figure 6. Between 2002 and 2009, there was an increase in the proportion of good schools (Band 1 and 2) and also an increase in the proportion of weaker schools (Band 4 and 5). Bury was the only LA not to see this pattern as the percentage of good schools there increased without a corresponding increase in the number of lower-rated schools. Between 2009 and 2014, the percentage of good schools decreased everywhere except Trafford. This may indicate the results of Coalition efforts to “increase standards” in the education system. Some schools in our sample have decreased in quality because their results dropped following changes to the rules around GCSE league tables in 2014. Others have decreased in quality because they have been re-inspected by Ofsted between 2009 and 2014 and dropped a grade. Many schools in Trafford were less susceptible to these changes because they were achieving very high GCSE results through traditional academic subjects which were not affected by the GCSE league table changes. In addition, schools in Trafford had higher Ofsted gradings, on average, than in the other LAs which means that they were re-inspected less frequently than schools elsewhere in our study.

Figure 6: Summary of changes to school quality



Changes to Patterns of Access to Schools of Differing Quality

To examine access to schools over time, for pupils in Year 6, we used logistic regression models. We could have, instead, simply have calculated the probabilities of FSM/non FSM children attending different school types over time but we know that many of the top-rated schools will attract pupils with higher prior attainment (especially but not solely grammar schools in Trafford). Thus prior attainment is an important consideration.

Our first set of models (one per band) calculated the odds ratios of all pupils being in the different bands of schools we defined earlier whilst also accounting for FSM status, prior attainment, local authority and differences by year. The results are shown in Table 3 below and are statistically

significant (at the 0.05% level) unless italicised. The reference categories for each variable are shown in the table and are the same for all bands of school except Band 5¹².

Table 3: Odds ratios of children attending different school types by FSM and attainment status and LA, 2002 to 2014

	band 1		band 2		band 3		band 4		band 5	
	log odds		log odds		log odds		log odds		log odds	
	odds	SE	odds	SE	odds	SE	odds	SE	odds	SE
FSM	ref		ref		ref		ref		ref	
no FSM	2.96	0.21	1.35	0.04	0.70	0.02	0.80	0.04	0.59	0.05
Average attainment	ref		ref		ref		ref		ref	
High Attaining at KS2	4.13	0.18	0.91	0.03	0.59	0.02	0.77	0.04	0.58	0.05
Low Attaining at KS2	0.58	0.05	0.83	0.03	1.16	0.04	1.13	0.06	1.22	0.12
2002	ref		ref		ref		ref		no observations	
2009	3.53	0.18	0.76	0.03	0.65	0.02	1.66	0.10	ref	
2014	2.25	0.12	0.99	0.03	0.37	0.01	2.57	0.15	13.2	1.62
Manchester	ref		ref		ref		ref		ref	
Bury	2.33	0.16	3.4	0.12	0.36	0.01	0.31	0.02	no observations	
Salford	3.84	0.26	0.34	0.02	1.85	0.06	0.40	0.03	2.72	0.21
Trafford	13	0.77	0.76	0.03	0.67	0.02	0.07	0.01	0.44	0.05
cons	0	0.00	0.44	0.02	1.93	0.07	0.12	0.01	0.01	0.00
observations	29,734		29,734		29,734		29,734		15,849	

From Table 3, we can see that FSM children were less likely to be in Band 1 and 2 schools and more likely to be in schools in Band 3, 4 or 5 – regardless of attainment status, area or year. This is a striking finding and shows that prior attainment cannot solely account for the raw differences in proportions of FSM children in each type of school being picked up by the segregation indices earlier.

High prior attainment, however, increased the odds of children being in a more highly rated school. Those children with attainment above the expected level at KS2 were around 4 times more likely to be in Band 1 schools than children obtaining the expected level at KS2 (regardless of area or background) **and** less likely than those children to be in schools in Bands 2-5. Children with low prior attainment were less likely to be in Band 1 or Band 2 schools and more likely to be in Bands 3-5.

As our overall summary of school quality shows (see Table 3), there were changes to the numbers of schools in each band over time and large differences by area. We see the result of this in Figure 6, where children were more likely to be in Band 1 schools in 2009 and in 2014 but also more likely to be in a Band 4 or 5 school – as more schools fell into these classifications over time. Children were slightly less likely to be in schools in Bands 2 and 3 in 2009 and 2014 – suggesting that school

¹² Under our classification, no schools were in band 5 in 2002 and no schools in Bury were ever band 5 and so the reference category for year in the Band 5 model is 2009 and not 2002. This also accounts for the drop in observations for the Band 5 model.

quality, as measured by Ofsted, may have polarised over the period we study with increases in high performing and low performing schools and a reduction of schools performing 'averagely'. This is likely to be an artefact of the changes to school categorisations by Ofsted over the same time period rather than an indication that school quality was, in some real sense, polarising.

The differences by area are also clear in Figure 6 with children in areas other than Manchester more likely to be in Band 1 schools but more likely to be in schools in Band 4. For the other bands, the picture is more mixed. Children in Salford were more likely to be in Band 3 and 5 schools but less likely to be in Band 2 schools whereas children in Bury were more likely to be in Band 2 schools and less likely to be in Band 4 or 5 schools. Children in Trafford were less likely than those in Manchester to be in all bands of school except Band 1. These findings reflect the spread of schools of different quality around the areas.

Since our focus is on FSM children, we can run similar models (not shown) just for these children and with different reference categories for year to assess the changing likelihood of being in our different school bands over time. We find that the odds for FSM children alone broadly mirror those in Table 3. The main exception to this is that FSM children were similarly likely to be in Band 4 schools in 2009 and 2014 whereas non FSM children were much more likely to be in Band 4 schools in 2009 compared to 2002 and much more likely again to be in these type of schools in 2014. So, it seems as though the increase in Band 4 schools over time has affected the destinations of more non-FSM children than children on FSM.

This classification exercise cannot, however, tell us if FSM children were more, less or equally likely to get into the best schools in their area. For example, we have seen that school quality in general was high in Trafford but it may still be the case that FSM children there attended schools that were the worst relative to the other schools in the area. Our second set of models aimed to capture this relative measure of school quality by categorising the top 20% and bottom 20% of schools by area as the best and worst schools locally and the results are shown in Table 4¹³.

Table 4 shows that children on FSM were less likely to be in the best schools locally and more likely to be in the worst schools locally than those not on FSM. Children with higher prior attainment were also more likely to be in the best schools locally and less likely to be in the worst – with attainment making roughly the same difference in odds as not being on FSM. Low attaining children were more likely to be in the worst schools locally.

¹³ Again, all odds ratios are statistically significant at the 0.05% level unless italicised.

Table 4: Odds ratios of children attending different best and worst schools locally by FSM and attainment status and LA, 2002 to 2014

	best schools locally		worst schools locally	
	log odds	SE	log odds	SE
FSM	Ref		ref	
no FSM	2.04	0.08	0.59	0.02
Average attainment	Ref		ref	
High Attaining at KS2	2.23	0.07	0.5	0.02
Low Attaining at KS2	0.82	0.04	1.26	0.05
2002/3	Ref		ref	
2009/10	0.79	0.03	0.66	0.03
2014/15	0.71	0.02	0.9	0.03
Manchester	Ref		ref	
Bury	1.03	0.04	1.49	0.07
Salford	0.89	0.04	1.45	0.06
Trafford	0.69	0.03	1.78	0.08
cons	0.17	0.01	0.31	0.01
observations	29,734		29,734	

The findings for change over time are interesting as they suggest that children were less likely to be in the best and worst schools locally in 2009 and 2014 (than in 2002). We see these findings because fewer pupils overall were in the best and worst schools locally in 2009 and 2014 (compared to 2002) even though the numbers of schools (considered best and worst locally) remained the same. This happened partly because the schools in the top/bottom 20% changed, an increased number of schools with smaller Y6 intakes fell into both categories and because some schools that were consistently in either category for a number of years had smaller intakes in 2009 and 2014 compared to 2002.

Finally, considering the differences between areas, we see that children in Manchester were more likely to be in the best schools locally than children in Salford or Trafford but children in Bury, Salford and Trafford were more likely to be in the worst schools locally than children in Manchester. This shows us that, in terms of size of intake, the worst performing schools in Bury, Salford and Trafford had slightly larger intakes than those in Manchester and the top performing schools in Salford and Trafford had slightly smaller intakes than those in Manchester. Remembering that this is a relative measure of school quality helps us to understand these results for Trafford – as schools there tended to have a higher quality rating under our classification than elsewhere. So, it could be that the worst 20% of schools in Trafford were actually desirable to parents from neighbouring Manchester or Salford and thus they had high intakes. By contrast, some of the worst performing schools in Manchester were classified as Band 5 in our system and may have been avoided by parents for this reason. This does not, however, explain the differences between Manchester and Salford as Salford had a higher proportion of schools in Bands 4 and 5 compared to Manchester. A simpler explanation is that the best schools in Manchester tended to be bigger than in the other areas and the worst schools smaller.

Taking the absolute and relative results together, we see that non FSM children were more likely to be in schools that fell into Bands 1 and 2 of our classification and more likely to be in the best schools locally than their peers on FSM. This is after we accounted for the different distribution of schools around the area we studied and accounted for prior attainment. Even when we consider relative quality by area, we see that FSM children were more likely to be in the worst schools locally – thus an FSM child in an area of high school quality such as Trafford was more likely to be in one of the worst schools there (compared to a peer not on FSM) and less likely to be in one of the best rated schools. These results serve to undermine the argument that academically selective schools are a force for equality as children on FSM in our data, regardless of ability, were less likely to be in these schools than children not on FSM.

6. Summary and Conclusion

This paper set out to investigate three issues: the extent of system change between 2002, 2009 and 2014; its effect on patterns of social segregation and some of the underlying processes; and whether, regardless of their socio-economic composition, 'disadvantaged' children (measured by eligibility for Free School Meals) are more less or equally likely to attend a 'good' secondary school.

We chose the four local authorities studied here partly because they had undergone different processes of system and change. Indeed, the differences were very substantial, with one authority (Bury) having no secondary Academies by 2014, two undergoing change under Labour's Academy programme and then more under the Coalition's (Manchester and Salford), and one seeing no change under Labour and substantial change under the Coalition (Trafford). If either Labour's Academies programme or the Coalition's was the main driver of social segregation in the school system we would expect to see different levels of change at different times in the different local authorities.

Looking cross-sectionally, we find that the extent of school segregation in all periods varied between local authorities and was much higher in Trafford, a selective school system, than in the other (non-selective) systems examined here. However, we raise questions about the suitability of using segregation indices for studying this over time and suggest that these alone do not allow us to understand the extent to which the make-up of the school system (numbers of schools, numbers of children and their characteristics) was driving any changes we did observe over time. If we just take each time point separately, we also see that school segregation largely reflected neighbourhood segregation i.e. areas with higher residential segregation had more segregated schools. This suggests that if the goal is more socially mixed schools, policy makers would need to consider systems of bussing, or mechanisms to create more mixed housing, not just changes to the school system.

Overall, three of the authorities had more segregated school systems in 2014 than in 2002 – that is to say they appeared to become more segregated as Academisation increased. However, the changes observed do not match the changes in the school system. Trafford, for example, became substantially more segregated between 2002 and 2009 when it experienced no change to its school system. Bury, by contrast, became less segregated between 2009 and 2014 when it had no change to its school system. Although it may be the case that over time, systems with greater differentiation and school autonomy create the conditions for more social segregation, we cannot ascribe changes in segregation to changes in school systems over these two periods as school systems did not change uniformly in line with the changes in the indicators. Again, we show that part of the difficulty here is that segregation indices have substantial limitations for measuring and comparing local school systems, and their variation over time. On their own they cannot be relied upon to indicate changes of this kind.

We find that the changes in the distribution of pupils reflected a complex set of localised changes in local school markets such as schools opening or closing or changing their intakes, and different degrees of cross-border movement. Some of these changes were related to changes to the governance status of schools, but many others were not. This suggests to us that there were other factors that could be more usefully explored to explain processes of social sorting in schools, such

as the changes in residential composition of neighbourhoods under urban renewal, which would further complicate the picture. As we see that there are no universal effects in this area that can be attributed to 'academisation', we argue that any effects need to be examined at the local level and we need to better understand patterns of access locally.

Given the strong relationship between residential patterns and school intakes, the question of school quality is particularly important. It could be less important that schools are socially mixed than that all children attend equally good schools. Taking an absolute (national) measure of school quality that combined academic results of previous cohorts and Ofsted inspection, we found that FSM pupils were less likely to be in the best schools and more likely to be in the worst schools than their non FSM counterparts even when prior attainment was taken into account. If we look at school quality, we see that since 2002 there has been an apparent 'polarisation' of school quality with an increase in the highest quality schools but a similar increase in the numbers deemed low quality. We suggest that this may be more a result of changes to the classification of schools by Ofsted than an indication of any real changes to quality.

We also showed that there were substantial differences in the odds of FSM and non FSM children attending the best schools locally and avoiding the worst and so it is not just the case that differing school quality by area can account for the different odds we observe with the absolute measure of school quality. We cannot, however, attribute these changes over time clearly (or solely) to Academisation. In areas such as Trafford, where the main changes have been under the Coalition's version of academisation, the structure of the school system has remained virtually unchanged meaning that the processes leading to segregation could have continued as before.

Overall, therefore, we cannot say definitively that Academies, either Labour's version or the Coalition's, have increased or reduced social sorting and segregation or levelled the playing field of school quality in these four authorities. What we do observe clearly is that children on FSM were, in all the years we look at, more likely than their non FSM peers to be in the worst schools. Thus, both the Labour and the Coalition's policies of academisation could be said to have achieved very limited success. This exercise leads us to conclude that looking for blunt answers at a local authority or national level is unlikely to yield anything very helpful in policy terms, since it obscures the important local complexities which really shape children's opportunities and experiences. Further work at a local level, perhaps examining the different approaches to school improvement, the shape of catchment areas over time, the effects of changes to neighbourhood composition, and the extent and reasons for travel to non-local schools for different groups of children are more likely to illuminate how opportunities are changing and why.

Appendix 1

Appendix 1: Percentage of Secondary Schools that were Academies by Local Authority, by 2010 and by 2014

	by 2010		by 2014	
	% of schools	% of pupils	% of schools	% of pupils
ENGLAND	6.1	5.9	61.4	62.5
NORTH EAST	5.1	6.6	46	53.3
Darlington	14.3	9.7	100	100
Durham	0	0	48.5	51.1
Gateshead	0	0	70	75.4
Hartlepool	0	0	40	48.7
Middlesbrough	37.5	40.2	71.4	63.3
Newcastle upon Tyne	7.1	7.3	60	59.6
North Tyneside	0	0	12.5	21.7
Northumberland	3.8	12.4	22.7	41.5
Redcar and Cleveland	0	0	50	50.8
South Tyneside	0	0	22.2	28.3
Stockton-on-Tees	0	0	61.5	55.8
Sunderland	17.6	13.8	72.2	73
NORTH WEST	5.7	5.3	46	45.7
Blackburn with Darwen	10	8.2	66.7	63.5
Blackpool	0	0	85.7	84.1
Bolton	11.8	8.9	31.6	20.9
Bury	0	0	0	0
Cheshire East	0	0	68.2	68.6
Cheshire West and Chester	5	5.7	47.4	46.7
Cumbria	10.8	13.9	53.8	57.5
Halton	0	0	62.5	54.4
Knowsley	0	0	50	46.3
Lancashire	2.4	2.9	27.1	27.4
Liverpool	9.7	8.9	51.6	46.6
Manchester	25	18.8	66.7	60.2
Oldham	0	0	64.3	56
Rochdale	7.1	4.7	25	25.5
Salford	13.3	10.6	35.7	26.1
Sefton	0	0	45	46.7
St. Helens	0	0	22.2	23.9
Stockport	7.1	4.8	35.7	30.8
Tameside	12.5	17.1	46.7	51.5
Trafford	0	0	66.7	75.1
Warrington	0	0	69.2	72.6
Wigan	0	0	30	24.9
Wirral	4.3	3.2	63.6	70

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YORKSHIRE AND THE HUMBER	by 2010		by 2014	
	% of schools	% of pupils	% of schools	% of pupils
Barnsley	7.7	4.1	10	7.8
Bradford	13.8	12	54.5	45.4
Calderdale	0	0	71.4	79.5
Doncaster	17.6	15.3	100	100
East Riding of Yorkshire	0	0	36.8	35.7
Kingston Upon Hull, City of	14.3	13.6	53.8	49.3
Kirklees	0	0	50	56.6
Leeds	7.9	6.4	50	48.8
North East Lincolnshire	27.3	26.9	100	100
North Lincolnshire	7.7	6	76.9	71.6
North Yorkshire	0	0	20.9	27.3
Rotherham	6.3	6.3	62.5	63.3
Sheffield	11.1	9.4	81.5	78
Wakefield	5.6	10.3	94.4	92.6
York	0	0	22.2	21.9
EAST MIDLANDS	5.7	7.1	73.6	75
Derby	7.1	6.7	57.1	59.4
Derbyshire	0	0	35.6	39.7
Leicester	5.6	4.3	5.6	5.1
Leicestershire	0	0	91.1	94.1
Lincolnshire	8.3	14.2	85.5	88
Northamptonshire	12.2	12.7	86	89.3
Nottingham	28.6	35.4	87.5	86.8
Nottinghamshire	2.2	1.5	89.1	90.1
Rutland	0	0	100	100
WEST MIDLANDS	5.8	5.7	60.2	61.3
Birmingham	5.3	4.1	57.8	55.1
Coventry	5.3	3.6	68.2	66.7
Dudley	0	0	35	42.1
Herefordshire	13.3	10.2	68.8	65.1
Sandwell	33.3	29.8	70.6	70.3
Shropshire	0	0	57.1	55.4
Solihull	21.4	22.2	78.6	78
Staffordshire	0	0	38	40
Stoke-on-Trent	0	0	81.3	82.1
Telford and Wrekin	15.4	14.9	57.1	51.1
Walsall	15.8	15.7	80	79
Warwickshire	0	0	75	71.3
Wolverhampton	5.6	4.8	58.8	60.1
Worcestershire	2.2	1.8	68.9	77.9

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	% of schools	% of pupils	% of schools	% of pupils
EAST OF ENGLAND	4	4.2	75.6	78.8
Bedford	0	0	71.4	78.5
Central Bedfordshire	3	2.4	71.9	81.4
Cambridgeshire	0	0	96.9	96.6
Essex	7.7	8	87.2	88.7
Hertfordshire	2.4	2	73.8	76
Luton	16.7	14	46.2	46.8
Norfolk	3.8	2.3	66.7	68.9
Peterborough	18.2	21.5	75	75.8
Southend-on-Sea	0	0	75	78.6
Suffolk	0	0	66.7	68.6
Thurrock	20	16.1	90	94.1
LONDON	11.9	9.7	61.4	60.1
INNER LONDON	18.5	16.6	51.7	47.2
Camden	0	0	10	7.1
City of London	0	0		
Hackney	33.3	29.5	56.3	55.4
Hammersmith and Fulham	11.1	12.7	83.3	79.7
Haringey	8.3	7.9	57.1	42.2
Islington	20	19	27.3	25
Kensington and Chelsea	20	4.5	50	56.1
Lambeth	15.4	13.1	55.6	51.5
Lewisham	21.4	26.9	21.4	29.8
Newham	0	0	40	32.7
Southwark	56.3	56.3	83.3	86.3
Tower Hamlets	0	0	22.2	8
Wandsworth	9.1	9.6	72.7	76.9
Westminster	40	40.4	91.7	91.2
OUTER LONDON	8.3	6.6	67.2	66.4
Barking and Dagenham	0	0	27.3	11.9
Barnet	9.5	8	68	72.9
Bexley	18.8	13	100	100
Brent	26.7	15.2	80	79.9
Bromley	0	0	94.1	95.4
Croydon	23.8	25.3	65.2	67.8
Ealing	7.7	8.1	35.7	34.5
Enfield	11.1	7.6	40	33.6
Greenwich	7.7	5.5	57.1	55.4
Harrow	0	0	81.8	80.9
Havering	0	0	78.9	83.9
Hillingdon	11.1	9.5	90.5	92.2
Hounslow	0	0	87.5	82.2
Kingston upon Thames	0	0	90	94.2
Merton	25	19.5	37.5	29.1
Redbridge	0	0	38.9	38.4
Richmond upon Thames	0	0	77.8	87.6
Sutton	0	0	78.6	80.5
Waltham Forest	6.3	5.7	38.9	34.6

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	by 2010		by 2014	
	% of schools	% of pupils	% of schools	% of pupils
SOUTH EAST	4.9	4.9	60.2	60.7
Bracknell Forest	0	0	16.7	14.9
Brighton and Hove	0	0	30	11.7
Buckinghamshire	2.9	2.1	81.1	80.4
East Sussex	0	0	57.1	52.9
Hampshire	0	0	42.9	47.8
Isle of Wight	0	0	62.5	48.4
Kent	10	10.9	71.6	73.3
Medway	5.6	7	94.1	95.5
Milton Keynes	8.3	7	66.7	63.9
Oxfordshire	5.9	4.4	75.7	80.3
Portsmouth	10	4	50	50.7
Reading	14.3	14.1	75	78.2
Slough	9.1	10.9	69.2	68.3
Southampton	16.7	16	38.5	31.1
Surrey	0	0	55.6	57
West Berkshire	0	0	60	62.9
West Sussex	10.5	11.4	42.5	40.1
Windsor and Maidenhead	0	0	50	55.4
Wokingham	0	0	55.6	55.7
SOUTH WEST	4	3.4	70.9	73.2
Bath and North East Somerset	0	0	78.6	81.3
Bournemouth	0	0	100	100
Bristol, City of	38.1	31.7	77.3	73
Cornwall	0	0	56.3	61.9
Devon	0	0	60	60
Dorset	0	0	40.6	46.6
Gloucestershire	0	0	84.6	87.6
Isles of Scilly	0	0	0	0
North Somerset	0	0	81.8	81.6
Plymouth	0	0	88.9	90.6
Poole	0	0	77.8	66.7
Somerset	0	0	71.8	73.3
South Gloucestershire	18.8	19.1	70.6	72.8
Swindon	9.1	11.5	91.7	91
Torbay	0	0	77.8	76.2
Wiltshire	3.4	2.2	70	78.3

Appendix 2 – Percentage FSM by school

school name	LA name	2002/3	2009/10	2014/15
Abraham Moss Community School	Manchester	47	50.3	35.8
All Hallows RC High School	Salford	61	41.7	37
Altrincham College of Arts	Trafford	19.4	22.1	15.4
Altrincham Grammar School for Boys	Trafford	SUPP	0	SUPP
Altrincham Grammar School for Girls	Trafford	0	0	0
Ashton-on-Mersey School	Trafford	13.1	9.9	8.5
Beis Yaakov High School	Salford	NA	SUPP	SUPP
Blessed Thomas Holford Catholic College	Trafford	20.3	SUPP	11.2
Broad Oak Sports College	Bury	30.8	33.3	35.9
Broadoak School	Trafford	41.9	39.3	36.4
Buile Hill Visual Arts College	Salford	38.8	43.4	30.6
Burnage Academy for Boys	Manchester	52.7	37.6	27.2
Bury Church of England High School	Bury	SUPP	SUPP	SUPP
Castlebrook High School	Bury	12.4	14.4	14.3
Cedar Mount Academy	Manchester	72.7	52	39.1
Chorlton High School	Manchester	36.9	31.8	20.5
Coney Green Technology School	Bury	27.4	NA	NA
Ellesmere Park High School	Salford	30.8	20.6	27.5
Flixton Girls' High School	Trafford	16.3	SUPP	12.8
Harrop Fold School	Salford	37.2	37.1	49.3
Irlam and Cadishead College	Salford	18.9	18.3	21
Levenshulme High School	Manchester	44.5	33.3	32.6
Loreto Grammar School	Trafford	SUPP	SUPP	SUPP
Loreto High School Chorlton	Manchester	62.7	39.4	30.8
Lostock College	Trafford	27.9	SUPP	30.8
Manchester Academy	Manchester	58.5	65.8	38.4
Manchester Communication Academy	Manchester	NA	NA	45.1
Manchester Creative and Media Academy	Manchester	43	40.1	42.7
Manchester Creative and Media Academy for Boys	Manchester	50.6	56.3	NA
Manchester Enterprise Academy	Manchester	60.9	60.5	47.5
Manchester Health Academy	Manchester	53.7	69.6	47.5
Manchester Mesivta School	Bury	NA	0	SUPP
Moorside High School	Salford	14.2	12.9	11.8
Newall Green High School	Manchester	56.1	43.7	45.4
Oasis Academy MediaCityUK	Salford	37.4	37.9	44
Our Lady's RC Sports College	Manchester	42.6	40.7	34.2
Parrenthorn High School	Bury	11.9	14.5	13.5
Parrs Wood High School	Manchester	24.6	23.3	18.8
Philips High School	Bury	18.1	22.9	21.2
Prestwich Arts College	Bury	28.5	29.5	23.2
Radcliffe Riverside	Bury	15.5	38.5	NA
Sale Grammar School	Trafford	SUPP	SUPP	SUPP

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Sale High School	Trafford	22.8	29.2	28.7
Salford City Academy	Salford	36.2	44.6	34.7
St Ambrose Barlow RC High School	Salford	SUPP	SUPP	12.8
St Ambrose College	Trafford	SUPP	SUPP	SUPP
St Antony's Catholic College	Trafford	26.3	25	33.7
St Gabriel's RC High School	Bury	SUPP	9	9.9
St George's RC High School	Salford	22.4	20.6	NA
St Matthew's RC High School	Manchester	35.6	32.2	22.6
St Monica's RC High School and Sixth Form Centre	Bury	7.1	9.5	7.4
St Patrick's RC High School and Arts College	Salford	16.9	13	13.7
St Paul's Catholic High School	Manchester	28.6	40.6	34.7
St Peter's RC High School	Manchester	56.4	48.8	41.9
Stretford Grammar School	Trafford	17.9	SUPP	13.7
Stretford High School	Trafford	45.6	32.5	29.3
The Albion Academy	Salford	52.1	63.7	47.1
The Barlow RC High School and Specialist Science College	Manchester	24.4	33.1	26.7
The Co-operative Academy of Manchester	Manchester	47.9	42	43.3
The Derby High School	Bury	18.2	27.8	21.9
The East Manchester Academy	Manchester	NA	NA	37.9
The Elton High School Specialist Arts College	Bury	10.6	11.7	8.7
The King David High School	Manchester	SUPP	SUPP	SUPP
The Swinton High School	Salford	21.1	23	18.9
Tottington High School	Bury	7.1	9.8	14.2
Trinity CofE High School	Manchester	20	28.6	24.4
Urmston Grammar Academy	Trafford	SUPP	SUPP	SUPP
Walkden High School	Salford	7.8	11.3	16.6
Wellacre Technology Academy	Trafford	14.7	9.9	14.4
Wellington School	Trafford	10.7	7.2	5.6
Whalley Range 11-18 High School	Manchester	41.5	40.8	26
William Hulme's Grammar School	Manchester	NA	30	24.1
Woodhey High School	Bury	8.3	7.5	8.6
Wright Robinson College	Manchester	46.6	37.3	35.1

- Percentages are suppressed (represented by 'SUPP') if they are based on 11 or fewer cases – as recommended in the NPD User Guide (available here: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/472700/NPD_user_guide.pdf).
- We use 'NA' to indicate a year where a school was not open or was not open as a state school.
- The latest school name is used in the table and we compare the intakes of new academies to predecessor schools as though the school had been open continuously throughout the period.

Appendix 3 – Average IDACI rank by school

	LA name	2002/03	2009/10	2014/15
Abraham Moss Community School	Manchester	4364	3204	4759
All Hallows RC High School	Salford	2258	3064	3274
Altrincham College of Arts	Trafford	11422	12699	19518
Altrincham Grammar School for Boys	Trafford	24283	24636	24108
Altrincham Grammar School for Girls	Trafford	25146	24363	25881
Ashton-on-Mersey School	Trafford	18940	20781	21852
Beis Yaakov High School	Salford	NA	14085	14238
Blessed Thomas Holford Catholic College	Trafford	12650	15552	18541
Broad Oak Sports College	Bury	7622	7739	7662
Broadoak School	Trafford	3086	3363	2894
Buile Hill Visual Arts College	Salford	4903	4423	7094
Burnage Academy for Boys	Manchester	4414	3830	4517
Bury Church of England High School	Bury	19058	19927	16470
Castlebrook High School	Bury	15109	15765	15105
Cedar Mount Academy	Manchester	1768	2361	2734
Chorlton High School	Manchester	6061	7480	9645
Coney Green Technology School	Bury	10575	NA	NA
Ellesmere Park High School	Salford	9178	10537	9318
Flixton Girls' High School	Trafford	16519	18317	17546
Harrop Fold School	Salford	5710	4300	4970
Irlam and Cadishead College	Salford	12428	12801	12535
Levenshulme High School	Manchester	5269	4325	4874
Loreto Grammar School	Trafford	20198	22747	23975
Loreto High School Chorlton	Manchester	2314	4827	4056
Lostock College	Trafford	9936	9100	10801
Manchester Enterprise Academy	Manchester	2924	3434	2578
Manchester Academy	Manchester	1523	1715	2229
Manchester Communication Academy	Manchester	NA	NA	2187
Manchester Creative and Media Academy	Manchester	4504	3019	4166
Manchester Creative and Media Academy for Boys	Manchester	3567	3094	NA
Manchester Health Academy	Manchester	4276	4320	4993
Manchester Mesivta School	Bury	NA	18741	16285
Moorside High School	Salford	11823	20646	17563
Newall Green High School	Manchester	3073	3063	3661
Oasis Academy MediaCityUK	Salford	7534	7174	1841
Our Lady's RC Sports College	Manchester	4597	3374	2489
Parrenthorn High School	Bury	14236	16226	14701
Parrs Wood High School	Manchester	13203	9961	11492
Philips High School	Bury	12542	13449	12798
Prestwich Arts College	Bury	10081	10082	9162
Radcliffe Riverside	Bury	10832	8790	NA
Saint Paul's Catholic High School	Trafford	3971	4068	3755

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Sale Grammar School	Trafford	23430	24172	25739
Sale High School	Salford	10973	11369	11910
Salford City Academy	Salford	5992	5998	6104
St Ambrose Barlow RC High School	Trafford	13927	14892	12595
St Ambrose College	Trafford	20342	22386	22868
St Antony's Catholic College	Bury	10815	12565	12372
St Gabriel's RC High School	Salford	17908	17842	16769
St George's RC High School	Manchester	9555	8384	
St Matthew's RC High School	Bury	6161	5150	7197
St Monica's RC High School and Sixth Form Centre	Salford	15571	16912	16224
St Patrick's RC High School and Arts College	Manchester	11397	12353	12038
St Peter's RC High School	Manchester	2446	1922	2451
Stretford Grammar School	Trafford	8748	10846	13487
Stretford High School	Trafford	5549	6881	7469
The Albion Academy	Salford	2688	1678	2275
The Barlow RC High School and Specialist Science College	Manchester	9561	8009	8330
The Co-operative Academy	Manchester	2901	2743	3266
The Derby High School	Bury	11289	11519	8982
The East Manchester Academy	Manchester	NA	NA	1609
The Elton High School Specialist Arts College	Bury	17520	18880	19314
The King David High School	Manchester	22773	21562	21064
The Swinton High School	Salford	10410	10855	9091
Tottington High School	Bury	20952	21404	20505
Trinity CofE High School	Manchester	7409	4190	4119
Urmston Grammar Academy	Trafford	20615	19485	19430
Walkden High School	Salford	22548	19887	17406
Wellacre Technology Academy	Trafford	16346	16691	18724
Wellington School	Trafford	20978	23424	25700
Whalley Range 11-18 High School	Manchester	4753	3508	4510
William Hulme's Grammar School	Manchester	NA	6314	6321
Woodhey High School	Bury	22782	24729	23918
Wright Robinson College	Manchester	3029	3576	4891

- We use 'NA' to indicate a year where a school was not open or was not open as a state school.
- The latest school name is used in the table and we compare the intakes of new academies to predecessor schools as though the school had been open continuously throughout the period.

Appendix 4 – Number of MSOAs from which schools draw pupils

	LA name	2002/3	2009/10	2014/15
Abraham Moss Community School	Manchester	20	19	13
All Hallows RC High School	Salford	13	15	18
Altrincham College of Arts	Trafford	23	25	22
Altrincham Grammar School for Boys	Trafford	25	33	32
Altrincham Grammar School for Girls	Trafford	29	37	27
Ashton-on-Mersey School	Trafford	17	15	19
Beis Yaakov High School	Salford	NA	6	6
Blessed Thomas Holford Catholic College	Trafford	38	37	38
Broad Oak Sports College	Bury	18	13	10
Broadoak School	Trafford	4	7	4
Buile Hill Visual Arts College	Salford	18	18	18
Burnage Academy for Boys	Manchester	23	24	19
Bury Church of England High School	Bury	36	40	36
Castlebrook High School	Bury	20	31	25
Cedar Mount Academy	Manchester	27	20	18
Chorlton High School	Manchester	26	26	29
Coney Green Technology School	Bury	16	NA	NA
Ellesmere Park High School	Salford	14	17	16
Flixton Girls' High School	Trafford	18	21	25
Harrop Fold School	Salford	12	12	16
Irlam and Cadishead College	Salford	6	5	7
Levenshulme High School	Manchester	24	25	24
Loreto Grammar School	Trafford	42	44	47
Loreto High School Chorlton	Manchester	19	34	36
Lostock College	Trafford	18	12	9
Manchester Enterprise Academy	Manchester	11	10	7
Manchester Academy	Manchester	27	30	24
Manchester Communication Academy	Manchester	NA	NA	25
Manchester Creative and Media Academy	Manchester	27	28	19
Manchester Creative and Media Academy for Boys	Manchester	25	15	NA
Manchester Health Academy	Manchester	18	13	11
Manchester Mesivta School	Bury	NA	6	6
Moorside High School	Salford	24	15	16
Newall Green High School	Manchester	18	10	12
Oasis Academy MediaCityUK	Salford	20	12	15
Our Lady's RC Sports College	Manchester	17	18	16
Parrenthorn High School	Bury	18	20	16
Parrs Wood High School	Manchester	29	33	26
Philips High School	Bury	20	19	21
Prestwich Arts College	Bury	23	26	27
Radcliffe Riverside	Bury	14	10	NA
Saint Paul's Catholic High School	Trafford	14	11	14

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Sale Grammar School	Trafford	19	29	25
Sale High School	Salford	24	25	28
Salford City Academy	Salford	16	16	13
St Ambrose Barlow RC High School	Trafford	20	21	27
St Ambrose College	Trafford	40	51	59
St Antony's Catholic College	Bury	22	21	22
St Gabriel's RC High School	Salford	29	28	38
St George's RC High School	Manchester	11	12	NA
St Matthew's RC High School	Bury	25	25	23
St Monica's RC High School and Sixth Form Centre	Salford	28	27	26
St Patrick's RC High School and Arts College	Manchester	27	20	19
St Peter's RC High School	Manchester	22	32	30
Stretford Grammar School	Trafford	32	49	34
Stretford High School	Trafford	19	16	12
The Albion High Academy	Salford	16	15	16
The Barlow RC High School and Specialist Science College	Manchester	24	31	37
The Co-operative Academy	Manchester	20	15	19
The Derby High School	Bury	19	16	15
The East Manchester Academy	Manchester	NA	NA	19
The Elton High School Specialist Arts College	Bury	26	19	21
The King David High School	Manchester	30	27	18
The Swinton High School	Salford	18	16	18
Tottington High School	Bury	16	20	18
Trinity CofE High School	Manchester	60	58	59
Urmston Grammar Academy	Trafford	10	23	39
Walkden High School	Salford	17	11	22
Wellacre Technology Academy	Trafford	18	22	18
Wellington School	Trafford	15	13	15
Whalley Range 11-18 High School	Manchester	31	45	48
William Hulme's Grammar School	Manchester	NA	41	38
Woodhey High School	Bury	14	17	15
Wright Robinson College	Manchester	26	29	36

- We use 'NA' to indicate a year where a school was not open or was not open as a state school.
- The latest school name is used in the table and we compare the intakes of new academies to predecessor schools as though the school had been open continuously throughout the period.

Appendix 5 – Number of schools attended by pupils of each MSOA

	2002/03	2009/10	2014/15
Bury 001	5	5	5
Bury 002	5	5	5
Bury 003	6	9	8
Bury 004	12	11	9
Bury 005	9	8	8
Bury 006	8	8	7
Bury 007	11	9	9
Bury 008	14	10	12
Bury 009	9	8	9
Bury 010	10	8	9
Bury 011	11	10	10
Bury 012	16	10	14
Bury 013	7	11	9
Bury 014	12	14	14
Bury 015	12	11	12
Bury 016	11	14	13
Bury 017	8	10	11
Bury 018	14	13	14
Bury 019	9	6	9
Bury 020	10	8	9
Bury 021	10	10	9
Bury 022	12	7	8
Bury 023	13	11	10
Bury 024	10	8	9
Bury 025	6	11	10
Bury 026	10	13	14
Manchester 001	13	16	11
Manchester 002	18	18	19
Manchester 003	16	17	15
Manchester 004	17	20	15
Manchester 005	13	11	13
Manchester 006	15	14	15
Manchester 007	12	18	14
Manchester 008	19	19	21
Manchester 009	15	20	16
Manchester 010	15	31	37*
Manchester 011	17	16	15
Manchester 012	22	18	18
Manchester 013	20	16	16
Manchester 014	10	9	7*
Manchester 015	21	13	18
Manchester 016	12	10	18*
Manchester 017	19	17	14

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Manchester 018	16	16	17
Manchester 019	11	13	13
Manchester 020	16	15	19
Manchester 021	16	14	19
Manchester 022	18	17	15
Manchester 023	18	17	22
Manchester 024	17	15	18
Manchester 025	16	13	16
Manchester 026	16	15	16
Manchester 027	18	17	21
Manchester 028	12	12	16
Manchester 029	13	11	12
Manchester 030	23	17	17
Manchester 031	18	16	20
Manchester 032	8	14	14
Manchester 033	11	16	13
Manchester 034	20	16	21
Manchester 035	13	14	13
Manchester 036	11	11	13
Manchester 037	12	10	9
Manchester 038	8	9	9
Manchester 039	8	6	6
Manchester 040	9	10	13
Manchester 041	15	11	17
Manchester 042	10	13	16
Manchester 043	6	7	7
Manchester 044	12	16	16
Manchester 045	9	13	12
Manchester 046	16	14	14
Manchester 047	12	12	13
Manchester 048	11	15	14
Manchester 049	18	17	12
Manchester 050	13	20	17
Manchester 051	13	15	15
Manchester 052	12	16	10
Manchester 053	15	15	11
Manchester 054	NA	NA	6
Manchester 055	NA	NA	1
Manchester 056	NA	NA	15
Manchester 057	NA	NA	6
Manchester 058	NA	NA	22
Manchester 059	NA	NA	11
Salford 001	8	9	6
Salford 002	8	7	8
Salford 003	8	8	13
Salford 004	10	8	11

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Salford 005	10	9	10
Salford 006	8	9	7
Salford 007	11	11	6
Salford 008	13	14	10
Salford 009	8	11	9
Salford 010	9	9	15
Salford 011	15	16	12
Salford 012	10	10	12
Salford 013	13	13	15
Salford 014	7	10	8
Salford 015	7	11	10
Salford 016	18	18	18
Salford 017	11	11	12
Salford 018	9	13	8
Salford 019	8	7	12
Salford 020	10	13	10
Salford 021	13	13	16
Salford 022	17	12	12
Salford 023	9	11	9
Salford 024	10	7	12
Salford 025	10	10	12
Salford 026	11	9	10
Salford 027	11	9	9
Salford 028	10	14	14
Salford 029	9	7	9
Salford 030	6	9	9
Trafford 001	17	20	17
Trafford 002	11	14	10
Trafford 003	14	22	17
Trafford 004	14	20	19
Trafford 005	9	10	10
Trafford 006	20	14	16
Trafford 007	12	11	10
Trafford 008	15	14	13
Trafford 009	11	11	13
Trafford 010	11	12	10
Trafford 011	17	17	18
Trafford 012	10	10	12
Trafford 013	9	8	9
Trafford 014	12	9	10
Trafford 015	11	12	13
Trafford 016	8	9	9
Trafford 017	12	12	11
Trafford 018	11	13	17
Trafford 019	15	12	10
Trafford 020	10	12	13

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Trafford 021	11	12	12
Trafford 022	11	10	14
Trafford 023	10	9	11
Trafford 024	9	10	10
Trafford 025	9	13	12
Trafford 026	9	10	9
Trafford 027	9	10	9
Trafford 028	8	11	11

Some MSOAs have changed over the time period studied as population growth means they split into two new MSOAs. Where this has happened, we calculate the total schools attended for the old MSOA area and place an asterisk next to this number. We also include the new MSOA area and use 'NA' to indicate the years for which it did not exist.

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