This study examined the extent to which introduction of educational markets changed the social composition of secondary schools in England and Wales. Using data from the introduction of the 1988 Education Reform Act onward, it measured changes in the tendency for students with different socioeconomic characteristics to cluster in particular schools. It considered reasons for changes and regional differences in segregation, relating these reasons to changes in school examination results. The study examined the outcomes of a choice program versus the process of choice itself. Data came from the annual census, interviews with administrators responsible for the admission process, brochures on school admission and allocation procedures, and information on each school (e.g., student numbers and years, gender, eligibility for free meals, special needs, ethnicity, stages of English, unauthorized absences, and test results). Results showed an annual decline in segregation of students by poverty until 1996, then a rise in segregation by poverty from 1997-2001. The main factor in determining level of segregation was local housing pattern, followed by the nature of local schooling. School choice policies have not shown clear benefits or drawbacks. They are generally popular with parents and schools. Most families get their first choice of schools. Examination results have risen since 1989. (Contains 38 references.) (SM)
Measuring Markets: the impact of twelve years of school choice

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Abstract

This paper contains a summary of the findings for a recently completed ESRC-funded project (R000238031). The purpose of the project was to examine the extent to which the introduction of educational markets gave rise to changes in the social composition of secondary schools in England and Wales. Using official statistics for this purpose, from the introduction of the Education Reform Act 1988 (ERA88) onwards, we measured changes over time in the tendency for pupils with particular socio-economic characteristics to cluster in particular schools (termed segregation). We considered a variety of reasons for the changes and regional differences in segregation that we encountered, and also began to relate these to changes in school output figures (i.e. public examination results). The project therefore moved from description and measurement to exploration and explanation. It also raised unforeseen methodological and research-capacity issues.

Background

Reinventing the principles and organisation of the allocation of public services has been a feature of public policy in the UK, Australia, New Zealand, the USA and some nations in continental Europe and Scandinavia over the last two decades. Characteristic of these reforms is the creation of competition...
between and within public sector institutions, diversification in the forms of provision, the advocacy of choice for newly constituted consumers of public services and the consequent manufacturing of client-provider relationships in the pursuit of efficiency gains in public service provision (Clarke and Newman, 1997, Osborne and Gaebler, 1993). These themes are manifest in the interlocking policy initiatives of the 1988 Education Reform Act (Maclure, 1988, Whitty et al. 1998). The creation of markets in education, increasing parental choice, advancing the autonomy of educational institutions and the implementation of a per capita funding regime exemplify the features of the so-called 'new public management' (Ferlie et al. 1996, Gewirtz, 2002). A decade on, what has the application of new public management techniques and values, in particular, marketisation yielded in education? What changes have been wrought on schools, their composition, their performance and their 'effectiveness'? To what extent has the market forced distinctions between relatively good and poor schools?

Our project was constructed in response to a field of research that has focused on the operation of the limited market in schools from a number of perspectives (see for example Gorard 1997, 1999). Some writers have been primarily concerned to theorise the nature of a system of parental choice of schools (e.g. Le Grand and Bartlett 1993), others have wished to describe and analyse the micro-political process of choosing a new school and argued that markets assisted middle class families in the social educational reproduction strategies (e.g. Gewirtz et al. 1995). Some have been concerned to find out which members of the family are involved in the process of choosing (e.g. David et al. 1995), while others have considered the implications for schools (e.g. James and Phillips 1995). Other research has addressed several of these questions together (e.g. Glatter et al. 1997). On the international scene, Lauder et al. (1999) reported that New Zealand education markets had given rise to the socio-economic and educational polarisation of schools. Some writers have been avowedly in favour of the strengthening of market forces in the system of educational planning (e.g. Tooley 1994), but perhaps the majority of British research has emphasised the negative consequences of the policy, with many observers simply taking the results for granted (e.g. Hatcher 1998). Some of the outcomes of this work are that the nature of limited markets is better understood, that the difficulties of choosing for some sections of the community have been emphasised, and that the criteria used to make choices have been well-rehearsed. In one form or another, the above researchers have demonstrated a shared interest in the extent to which educational markets have impacted on the social stratification of schools.
For this reason, post-1988 markets in education have been compared in this body of work with the status ante, which has been variously referred to as 'state monopoly schooling' (Chubb and Moe 1988) or 'selection by mortgage' (Hirsch 1997). For example, Waslander and Thrupp state that 'those endowed with material and cultural capital will simply add to their existing advantages through choice policies' (1995, p. 21). Coleman (1992), however, argued that the stratification has been an ever-present feature of schooling systems and all that changes is 'the stratifying principle' that allocates categories of students to different schools. Is the market a new stratifying principle as was widely assumed? Prior to the research reported here there was no direct comparison of the extent to which social stratification, for example, which undoubtedly occurred under the catchment area system, had been transformed by the post-1988 market-led principle of educational provision. In principle it is possible for markets to have a clearly stratifying effect and for them still to lead to less segregation between schools than a pure catchment area system. What was missing in the main was large-scale UK research which sought to examine the impact of market forces across a large number of schools. This project was intended to add this missing dimension.

Objectives

Against this background, our research had three main purposes - to: a) undertake a large scale study of the impact of policies based on market principles introduced by the 1988 Education Act on the socio-economic composition of schools, b) take forward the application of quantitative techniques in the evaluation of the impact of education policy, c) examine the extent to which changes wrought in the socio-economic composition of schools relates to school performance and school effectiveness as measured by 'official indicators'. The study was timely, since it is only now that the impact of the reforms can be fully judged, due to the nature of the 'established market'.

The research was distinctive in four respects:

- the scale of the investigation contrasts with the local, case study and qualitatively based studies which have dominated the British studies of educational markets;
its development of a robust comparator, of the kind which would enable us to track, over time, the stratifying effects of markets in comparison with the situation pre-1988;

- the combination of different forms of data in a complex set, using multi-disciplinary techniques;
- large scale data analysis aimed at linking market effects and evidence of relative school effectiveness and school improvement.

This research was also distinctive because the focus of the study was on the outcomes of a choice programme and not the process of choice itself. It relates schools to the changes in wider social structure evidenced by the indicators which point to a rise in poverty in England and Wales since 1988 and an equivalent rise in the proportion of cases being taken to appeal in the school allocation process (Gorard 1998), in ways which have not been attempted before. Small scale local case study research, has, hitherto, suggested that there is evidence that markets have given rise to greater between-school segregation, as measured by differences in the social composition of schools. In light of this and on a broader time scale and across national data sets our research was guided by the following research questions:

- To what extent are schools more or less stratified in terms of social class composition (and related indicators) since the Education Reform Act 1988? What are the differences in the social composition of schools in different sectors such as grant-maintained (Foundation) schools, and voluntary schools?

- To what extent do national, regional and district variations in the implementation of local markets relate to patterns of and changes in between-school segregation. Specifically, to what extent does the LEA have an impact on the formation of local markets and their subsequent effects on the social composition of schools?

- Is it possible to decide whether schools are generally becoming more or less effective in terms of examination performance since the Education Reform Act 1988? What is the relationship between school effects and changes in social composition?
Methods

Sample

Our sample is a complex one, composed of three levels. Level 1 comprises all state secondary schools in England and Wales. Level 2 consists of 41 selected LEAs, and Level 3 is a selection of 36 secondary schools in nine of these LEAs chosen as the sites for intensive fieldwork.

At Level 1, school-level and LEA-level data was collected for all primary and secondary schools in England and Wales, although for this project we analysed only secondary school data in detail. To provide a clear picture of what has happened to between-school segregation we analysed the social composition of schools from 1988 to 2000 at five levels: England and Wales combined, England and Wales separately, by LEA, by school district or competition space (where available), and by school. These data were provided annually from the annual census by DfEE (now DfES) via Form 7, and the Welsh Office (now Welsh Assembly Government) via Stats 1.

In Level 2, 41 LEAs from Wales and England were selected for further in-depth study. These LEAs were chosen to be as diverse as possible on the basis of the results of the first stage, within the limits set by the successful negotiation of access and constraints imposed by travel (White et al. 2001). The variation was geographic (north/south, England/Wales, urban/rural, political control, ethnic diversity), educational (selective/non-selective), and based on segregation (high/low, increasing/decreasing/static). These LEAs provided brochures on their school admission and allocation procedures for as many years as these had been retained. We also conducted an in-depth taped interview with one or more people in each LEA responsible for the annual admissions process. In some LEAs (usually urban) this involved a team including the Director of Education (a post abolished in most LEAs during the period of the study), in others (usually rural) this involved only one officer and represented only a small part of their duties (since admissions were seen as such a simple task).

Level 3 was based on more detailed consideration of three contrasting LEA clusters emerging from Level 2. Each cluster consisted of several contiguous LEAs with cross-flows of pupils (nine LEAs in
total). One was in west inner- and outer-London, one was a county to the south-west of London, and one in west Wales. Our earlier interviews had suggested schools in these clusters in 'competition' with each other, and we interviewed the headteacher (or other school manager responsible for year 7 entry) in twenty one of these schools (Fitz et al. 2002a).

Data collection
This study collected a range of secondary data on each school in England and Wales, including pupil numbers and years, gender, take-up of and eligibility for free school meals, statements of special needs, ethnicity, stages of English, unauthorised absences, and examination performance. These were supplemented by local area statistics based on the population censuses of 1981 and 1991. In addition, within selected LEAs, more detailed data were collected on admission procedures, and the background and prior attainment of school intakes, including parental occupation and performance at Key Stages 1 and 2. These were complemented by the views of LEA officials and school administrators. Taped, open-ended, interviews were held with the officers responsible for admissions from each LEA, and with the Heads (or alternates) from each school. The interviews were semi-structured based on an interview schedule appropriate to the findings from the first stage of the study for LEAs, and from the LEA interviews for Heads. Data were collected in the form of field-notes and observations throughout the investigation, from negotiation of access to feedback of results to end-users. A content analysis was carried out of LEA and school admission brochures.

Measuring socio-economic composition
In the absence of unique student identifiers and related social class data for school populations in England and Wales, in order to pursue our objective of large scale longitudinal analysis, we employed Free School Meals (FSM) as a means to examine changes in the social composition of schools over time.

Free school meals are available to school students from very low-income families (defined during the period of this study as eligible for state-funded Family Income Support). They are a widely used indicator of poverty in the UK. Overall, about 18% of the student population fall into this group, although they are unevenly distributed geographically and by institution. Around 20% of student
population are non-white, 8% speak English as a second language, and 2.5% have a statement of special educational needs. There are a few minor problems in the recording and use of these indicators, the solutions to which have been discussed elsewhere (Gorard 2000a). In general, the method of analysis, the number of triangulating indicators, and the sheer scale of the evidence overcomes the problems encountered (such as the absence in England of figures for FSM eligibility before 1993). We use eligibility for FSM, rather than take-up, wherever possible, and accept that there will be some cases of pupils from families on income support unknown to the schools. Nevertheless, several schools and LEAs, while admitting that there was no way of knowing for sure how many 'eligibles' they were unaware of, believed the annual census to be reasonably accurate especially since school funding and the category for 'value-added' assessment of results (PANDA) could rest on it. An officer in a London LEA, for example, said:

Some of the church schools, for instance, decided that they wanted to push families to let them know they were on income support, even if they didn't want to take up the free school meals, so that they could be included in the funding.

An officer in a rural LEA felt that even this was unnecessary:

In rural primary schools, where everybody knows everybody else, the secretary usually knows who is on income support. There may be a few each year who are not claiming [but even these are asked to do so in order to complete the Form 7].

The biggest limitation of these figures of disadvantage is therefore that they apply only to a minority of the school population. However, in previous debates about the impact of markets, it has not generally been the potential struggle between the middle-class and the super-rich that has concerned commentators. Rather the focus has been on precisely the disadvantaged 20% of the population that FSM attempts to measure. It is not perfect, but it is available with complete coverage for 12 years, based on an unchanging legal definition leading to a binary classification (FSM or not) which is more robust and reliable than an occupational categorisation.
Analysis

To examine and explain changes in the proportion of disadvantaged pupils in and between schools we devised a segregation ratio (Gorard and Fitz 1998). This is the number of 'disadvantaged' children in the school divided by the number of children in the school, over the number of disadvantaged children in the district divided by the number of children in the district. This gives a proportionate measure of level of social stratification in the school compared to its surrounding schools.

As Taeuber and James (1982) point out in relation to racial segregation, it 'does not depend upon the relative proportions of blacks and whites in the system, but only upon the relative distributions of students among schools' (p.134). In each case, the raw figures for each indicator per school are therefore also converted into a segregation index (S). S is defined as the proportion of disadvantaged students who would have to change schools for there to be an even spread of disadvantage between schools within the area used for analysis (i.e. it is the strict exchange proportion). For a school system such as that shown in Table 1 using FSM as an indicator of disadvantage then:

\[ S = 0.5 \times \frac{\sum_{i} |A_i/A - C_i/C|}{A+C} \]

Table 1 - Distribution of students characteristics between schools

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We could not simply use the Lorenz curve to monitor changes in segregation between schools over time, because the curves for each year intersect to such an extent. We therefore need an alternative method of ordering levels of segregation. We prefer to use S, which measures plain disproportionality. However, we have analysed the same data using a variety of indices, partly for comparison, and partly...
because no one index can fully describe the patterns uncovered. All proportionate indices of unevenness we have used show the same basic pattern over time (i.e. the changes we describe below are sufficiently large to appear whatever method one uses). The problems we have encountered with many other recognised indices, especially the dissimilarity index (D), have been described elsewhere (Gorard and Taylor 2002a).

The interview data were professionally transcribed, entered and coded using NUD*IST, and analysed in the light of the national and regional findings. The narratives from interview and other on-the-ground observations, and the details of admissions procedures in place in each LEA, were employed to help explain the changes and local variations in the above measures. We see these second stage interviews, then, as vital to further our understanding of the processes by which local institutional arrangements mediate the impact of national policies.

Results

Our findings are arranged in the order of our primary research questions:

Changes in segregation

From January 1989, the last annual census before the introduction of parental choice as defined by ERA88, to 1996 there was an annual decline in segregation of pupils in poverty (Figure 1). This took place in all economic regions of England, and represents a powerful social 'movement' (Gorard and Fitz 2000). From 1997 to 2001 segregation by poverty has begun to rise again (in England at least), and the rate of this rise appears to be increasing annually (although it remains well below 1989 levels). In other words, throughout the period when choice and competition policies were introduced there is no evidence of an increasing social stratification of schools (but no clearly sustained redistribution of 'disadvantaged' children across schools either). These findings run counter to claims made by both advocates and critics of 'educational markets' and contradicts earlier, small scale research which proposed that there is evidence of increasing socio-economic polarisation of schools. Where other indicators are available, segregation by ethnic group, first language, and additional educational need has
also declined over this period, and continues to decline. Levels of, and changes in, segregation are far from uniform across England and Wales. Not all local education authorities (LEAs) have experienced desegregation, and a few have even experienced increased segregation throughout. In general, Wales has less segregation than England, and urban areas have less segregation than rural ones (Taylor and Gorard 2000). Urban areas have also shown the greatest change over time, and some inner-London LEAs now have almost no segregation by poverty, for example.

Figure 1: Change in FSM segregation over time in England and Wales (secondary)

Moreover, we found no evidence of an increase in the number of schools in 'spirals of decline', in which they lost both student numbers and became increasingly segregated in terms of indicators of disadvantage. Such events were, and still are, very rare (Gorard et al. 2002).

The subsequent exploratory phase of the project was based on a combination of documentary analysis, primary interview data, and multivariate analysis of the statistical data. We attempted to explain both the differences in socio-economic segregation between different areas, and the changes in these patterns over time. We have developed an explanation of both phenomena that accounts for 100% of the statistical 'variation' (although we are still refining and adapting the ensuing model). In general terms our model has three elements - local social geography (Taylor et al. 2001b), school organisation (Gorard
and Taylor 2001), and admission arrangements (Fitz et al. 2002b) - and these are presented here in descending order of importance, and in temporal order as determinants of segregation.

The role of residence

The largest single factor determining the level of segregation in schools is the pattern of local housing, since even in a system of choice most children attend a school near their home. As one of our rural LEA respondents puts it - whatever system of allocation is used:

  it has always been preferable to live closer rather than further even before the 1988 Education Reform Act.

Many officers in rural areas would probably agree with one who said:

  We haven't really got a problem with admissions.

Some of these rural LEAs only have a part-time school admissions officer, who can tidy up the few remaining cases in an afternoon. Several said that they had never had an appeal (against placement) and hoped never to have one. Even where things are more complicated:

  It's always a major headache at transfer time fitting all the children in... but come September it goes away somehow.

What was clear from our rural respondents was that the whole issue of choice in the ERA88 and the subsequent School Standards and Framework Act was not intended for them. It was seen as a London-based solution to a perceived London problem. One LEA officer commented:

  It does seem a lot of it is aimed at solving problems in London that don't exist in other parts of Britain.
Rural LEAs have always co-operated with each other. Now, because of the need for fora, this officer has to formally consult with 13 authorities and all of them simply say 'no comment, no comment, no comment'.

Just because there is a problem with four London boroughs with different types of schools... why impose nationally a system to deal with that and it has been a total and utter waste of money?

Where richer and poorer families live 'cheek by jowl', usually in densely populated areas, then residential segregation is low meaning that school segregation is also low. However our project also considers and develops the non-recursive 'Belfast model' in which patterns of housing and of schooling are mutually determining (e.g. the price of local houses affects schools intakes, and the perceived desirability of schools can also affect the price of nearby houses). Some developments are attempting to overcome this using the 'Poundbury' mixed housing model. As the head of a Foundation school in a new unitary authority explains:

They are going to put 95 houses here... they have had to agree to a certain proportion of it being social housing or starter homes and not entirely five-bedroom luxury at £300,000 plus which is what most of the houses round here are.

Other indicators of relevance at this level are population density, and the actual levels of local poverty and unemployment. As would be expected, areas with more similarity among inhabitants (where there are no 'rich' or 'poor' for example) have less segregation by schools. When these geographical factors change, through the provision of new housing estates or the closure of local industry, the levels of segregation in local schools are affected. Where these changes involve opening or closing schools the impact on local patterns of segregation can be very great. An officer from a London LEA near Heathrow explains:

We've had a huge influx of refugees over the last five or more years from Somalia, Kosovo, Albania, and also way back this was a huge area for new Commonwealth settlements... We had
a huge rising population in [LEA] and we are looking at having to build another school in the north.

Due to population changes this LEA has ended up with parts where there are plenty of nearby school places but not enough residents to use them, and other areas where there are enough nearby residents but the local schools are seen by some as undesirable.

**The role of school organisation**

The next most important factor is the nature of local schooling. One key indicator here is a change in the number of schools. When schools are closed or merged then local segregation tends to decrease (as happened in several areas in the early 1990s), and when new schools are opened then segregation tends to rise, at least temporarily (as has happened in the later 1990s). An unpopular 11-16 school in a new unitary authority had to merge with a similar school as it was losing numbers, and took the opportunity to add a sixth form:

> Many parents of the brighter children in particular were taking the decision at the end of year six - let's go straight to schools with a sixth form - which is why eventually the decision was made to close the two schools and open up .... as an 11-18 school.

Another important indicator is summarised as diversity of schooling. Areas with elements of selection have higher levels of segregation, and show less change over time. The same is true of areas with higher proportions of voluntary-aided, voluntary controlled, Foundation, Welsh-medium, and independent schools (and more recently specialist schools appear to have a similar impact).

One inner London LEA office complains:

> All bar two of our secondary schools became grant-maintained... which meant that for admission purposes we had no control whatsoever and still don't... I forgot to mention that there is quite an outflow into the grammar schools [in adjacent LEA] which is really upsetting for schools.
A rural LEA officer explains how Foundation schools using apparently the same admissions criteria as the community schools can lead to segregation:

I picked three or four at random and they're all remarkably similar to [county admissions procedures]. I think where the problems arise is that they can for example annexe a larger bit of catchment that didn't belong to them before and we have no power to say they can't do that.

The same thing happens with faith-based schools, according to the officer at another London LEA:

Because we've got predominantly voluntary-aided schools so they take from the diocese rather than locally... across Central London.

Thus, only around 50% of local children attend a state school in this borough. The remainder go to nearby LEAs (usually faith-based schools) or to fee-paying schools, meaning that this wealthy borough appears to have a very high proportion of children in poverty (and, of course, little LEA-level segregation). As with many LEAs, having multiple admission authorities within one LEA makes it almost impossible for officers to be certain about first preferences. This was seen in an adjacent LEA as a problem for particular schools:

I think it [growth of faith-based schools] will polarise more if we're not very careful... That was the issue with most of the other heads that the church schools were interviewing because they're looking at religious affiliation... but seem to be interviewing for other criteria as well.

And on specialist schools:

One is a language college and therefore highly sought after because if you're doing languages you're going to be bright and if you're bright it's going to be a good school and if it's a good school you're going to go there.
Similar impacts on local levels of segregation, for different reasons, seems to occur when families have a choice of medium of instruction. The head of a rural English-medium community school in Wales points out how the traditionally 'privileged' Welsh speakers go to ysgolion Cymraeg in adjacent LEAs (and these schools like Foundation and faith-based ones do not have local catchments), and that even the English speaking 'incomers' cannot compensate for the relative poverty of those remaining:

The Welsh families from this area go to [school] and you can imagine the converse, you have the English medium kids from [LEA] coming here... They are basically very English people who have moved to the area and don't like the Welsh element... and you know the medium of communication here is mostly English... The parents perhaps are a little bit more alternative than the usual... more towards the hippy end. It is not always professionals, some come down from [English city] and claim dole here basically.

Areas with only LEA-controlled comprehensives have less segregation, and tend to reduce that segregation over time. We separate, analytically, school organisation factors from the impact of admissions arrangements since ERA88, because factors such as diversity of schooling pre-date 1988. Limited 'choice' has always been available, but previously dependent only on income, aptitude or family religion. Perhaps the problem is not so much to do with diversity of schools, as with the different forms of intake they are allowed to attract (Gorard and Taylor 2002b). Welsh LEAs will only pay for travel to the nearest school unless the family wishes to use a more distant Welsh-medium school, for example.

The role of admissions

The vast proportion of variation in levels of segregation and changes over time is accounted for by the kind of factors already outlined. Given that geography and school organisation anyway precede school allocation procedures in historical terms this means that the impact of increased market forces, if there is any, is likely to be confined to the margins of change. Policy changes at the Westminster parliament, the action of the adjudicator, and even the growing number of appeals are not related to substantial changes in socio-economic segregation in schools. This interpretation is confirmed by our interviews. Most families get their first preference school (as expressed), and most of these use a nearby traditional or catchment school. Most of the remaining families would probably not have used these local schools
even if the policy had been different. Increasing parental choice has not reduced the proportion of pupils in fee-paying or in faith-based schools, which have never used their LEA school allocation procedures. Over-subscription criteria are anyway only relevant to schools with more applicants than places, but it is important to recall that several schools are:

just taking what we can get. We are fighting for as many as we can.

Even where schools are over-subscribed, most schools and LEAs get around the problem of making decisions by simply expanding. The planned admission numbers are usually somewhat artificial anyway. In Wales the Popular Schools Initiative has allowed some schools to expand due to popularity, but even in England the same thing happens, but less publicly and less formally perhaps. Whether they agreed with this 'policy' or not, most LEAs and all school interviews reported popular schools expanding to meet demand. One rural LEA has a school with a PAN of 370 which is now taking 490 per year. A popular community school in a new unitary authority regularly negotiates an increase every year:

With [pre-unitary authority] the phone call would have been – 'this is the number and can you take an extra thirty?' No, we need two new classrooms - and it would be done... With [new unitary authority] we applied to increase our number and the LEA opposed it. After that we went to the Secretary of State and... they caved in at the end. We then changed our admission number to 227... Because we were continually increasing our standard number, I would say that... everyone who applied got in.

A Foundation school said:

We have been expanding a lot... we have just had a basic need bid that is extra funding from the DfEE to expand the school still further.

A rural county LEA admitted:
It is very difficult if you have got a 1233 school to say you can't take 1234 or 5, so unless we have strong case i.e. health and safety... we don't go to appeal because the school down the road has got places... We don't necessarily publish admission numbers as the standard number. We consult with the governors each year... if we have exceeded it we have exceeded it. We are now trying to get a PAN which reflects reality.

The same kind of thing happens in London LEAs:

The members wanted to respond to this public feeling... and what they wanted for their children... and they expanded [school] just like that - 25 extra places.

However, both LEA and school-level admission procedures do play a small part in producing our 100% model. For example, LEAs that have retained some element of banding (mostly ex-ILEA) have levels of segregation in their schools running at half what would be expected ceteris paribus. LEAs that use catchment areas as their main method of allocating places have levels of segregation around 20% higher than would be expected otherwise, and, as explained above, LEAs where a large proportion of schools are their own admissions authorities also have above average segregation.

Catchment areas can be amended to counter the problems of segregation, notably the creation of unpopular schools as observed by the head of one of these in a new unitary authority:

But since they shifted some of the boundaries around... there were very few if any problems like that this year. The change to catchment areas that affected this current year group has actually smoothed things over slightly.

However, it is generally very hard to change catchment boundaries because of public resistance and, ironically, the possibility of damage to the unpopular school:

We are often pushed to change the catchment area particularly by the school and we have found that can be very counter-productive because any changes... generate quite a high level of
emotion, but what it usually ends up in is a lot of negative press for that school. So therefore you start off with doing something to support the school... and you actually just drag it through the dirt.

Historical catchment areas therefore generally remain as they were even though residential and economic changes make them inappropriate (and LEAs try to help unpopular schools with image and extra funding instead). This helps explain why some catchment area LEAs move towards a more segregated local school system, and the situation is worsened when a rigid catchment system exists alongside schools with the ability to set their own geographical boundaries.

The local level of appeals has no clear relation to segregation, but is naturally inversely related to the number of surplus places. It is not clear whether appeals are a natural and expected outcome of market forces, or whether they are a symptom of the failure of the market. What is clear is that any area can elect to spend local tax income on funding surplus places, or on holding an increasing number of appeals.

Although choice policies do not appear to have either the clear benefits their advocates had hoped or the dangers of segregation their opponents feared, it is clear that they are generally popular with parents, and also with many LEAs and schools. Other than this, in many areas there is considerable doubt that they have made any difference, except symbolically, at all. A rural LEA officer believes that choice has been minimal because of travel limitations, that nearly everyone gets their expressed preference, and that it has become increasingly used by families from a wider range of socio-economic backgrounds:

Unless you live in an urban area maybe with two or three schools in your general community you don't particularly have a choice... because we haven't extended our transport policy... I come at that from the opposite end which is the number of parent who do go on to appeal is probably 1% and by definition 99% are not totally unhappy about it. A majority of parents certainly get their first choice... I think parental preference initially was something which was taken advantage of by relatively few people, more informed maybe. There is greater awareness now I would say.
An officer from another rural LEA agrees with all of these points. Families do not have much choice in reality, and since 95% or more choose their traditional catchment schools it is relatively easy to accommodate everyone, but the remaining 5% represent a range of backgrounds:

When the government started talking about parental choice... I think parents got misled into thinking they'd got choice when in fact there's very little... This only led to more appeals, with no chance of them winning unless we have made a mistake... I would have to say that a lot of our appeals are from people who are not particularly articulate. We get terribly scrappy notes with bad punctuation, not very well written, so it's not necessarily the most articulate middle class who are submitting appeals.

Her counterpart in a London LEA has been in post for a long time and also sees no real change since 1988:

I am not sure if there was any difference in the admittance to schools. I think the schools that are popular have always been popular and vice versa.. [On the other hand] when it changed [from selection] in 1976... those schools remained over-subscribed because they were ex-grammar schools and that's continued [and had an effect on local house prices].

The impact on standards
In so far as it is possible to ascertain, school examination results have risen since 1989 both in absolute terms (e.g. Figure 2), and in relation to the fee-paying sector (e.g. Table 2) (Gorard and Taylor 2002c). This has had the side-effect of reducing differential attainment in terms of social groups, such as those defined by poverty and ethnicity (Gorard 2000b). However, the strength of the statistical link between the socio-economic background of students and examination results has not weakened since 1989, and the scale of the difference between the top and bottom performing pupils remains very large (dwarfing the more commonly cited difference between boys and girls for example) (Gorard 2001). We have been able to use our composition-based indices to defend the performance of comprehensive schools
against other sectors, and to defend regions such as Wales against the charge of underperformance (Gorard 2000c).

Figure 2 - Percentage attaining 5+ GCSE A*-C equivalent

Table 2 - Comparison of results by sector

<table>
<thead>
<tr>
<th></th>
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<th>% 5GCSE A*-C</th>
<th>A levels points</th>
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<td></td>
<td>LEA/GM</td>
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<tr>
<td>1992</td>
<td>76</td>
<td>34</td>
<td>13.4</td>
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<td>77</td>
<td>36</td>
<td>13.6</td>
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<td>80</td>
<td>39</td>
<td>14.5</td>
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<td>1995</td>
<td>80</td>
<td>40</td>
<td>14.9</td>
</tr>
<tr>
<td>1996</td>
<td>80</td>
<td>41</td>
<td>15.5</td>
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<tr>
<td>1997</td>
<td>81</td>
<td>43</td>
<td>16.0</td>
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Conclusion
There has been a great deal of interest in our research in the Pacific Rim, US and the UK although we detect some differences in its reception arising from difference in the research cultures and traditions on either side of the Atlantic. It is fair to say that UK researchers in the area of school choice have found the research challenging - not least because it has run against an established orthodoxy of suggested findings emanating from predominantly small scale, fieldwork-intensive studies of the process of choosing schools. US researchers, and indeed researchers in other disciplines, have generally been more familiar with the scale of the research, the techniques and instruments employed and the means by which conclusions have been drawn.

The need to explain and justify our findings to researchers whose finding are at odds with our own has had the positive effect of leading us to a wider consideration of the meaning and measurement of segregation, and of the most appropriate levels at which to examine it. We feel that our findings open the way to the development of a new economic sociology of the market which is not based on purportedly universal accounts such as Public Choice Theory, and this is one avenue we intend pursuing further.

We also feel that our methods and the findings form an important step towards the further development of a 'new' political arithmetic - a concept widely talked about but little in evidence - in which complex situations can be examined by relatively simple mathematical techniques in combination with other forms of data. We have successfully combined educational data with geographical information systems (GIS). But this again has led us into conflict, with those who would prefer more complex (but less appropriate) probability approaches. At present the kind of research we have undertaken, here using complete national datasets, is well understood within the mainstream of social sciences but is relatively new in the arena of educational policy analysis.
References

Gorard, S. (1999) 'Well. That about wraps it up for school choice research': a state of the art review, School Leadership and Management, 19, 18, 25-47
Gorard, S. (2000c) 'Underachievement' is still an ugly word: reconsidering the relative effectiveness of schools in England and Wales, Journal of Education Policy, 15, 5, 559-573


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