Activities and achievements questionnaire

1. Summary of research results

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. The key findings are as follows.

1) From January 1989 to 1996, we found the degree of segregation by poverty in all secondary schools in England *declined* annually from a high of 35% to around 30% (meaning that 30% of children from poor families would have to exchange schools for there to be no segregation by poverty). 1995/96 was the first year in which all students in compulsory years at secondary schools had enrolled since ERA88. This figure for segregation has subsequently risen annually to 32% by 1999/2000. The pattern was repeated when we employed other commonly used measures of the socio-economic composition of school populations, such as statements of special educational need, first language use and ethnicity. It also applied to all primary schools in England (no figures available for primary schools in Wales), and to all of the indices of segregation we employed. The level of segregation by poverty between schools was considerable in 1989 and, despite the variations over time, remains considerable today.

2) These results, which emerge from the largest national study of the impacts of markets and choice in education, apply to over eight million students in 25,000 schools over a twelve-year period in England and Wales. The decline and recent slight rise in segregation between schools iterates at national, regional and most local education authority (LEA) and school district levels. Analysed at any level of aggregation school have generally converged over time in terms of the socio-economic characteristics of their ‘disadvantaged’ students. 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.

3) 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 some increased segregation. In general, Wales has less segregation than England, and urban areas have less segregation than rural ones. Urban areas have also shown the greatest change over time, and some inner-London LEAs now have almost no segregation by poverty for example.

4) In so far as it is possible to ascertain, school examination results have risen since 1989 both in absolute terms, and in relation to the fee-paying sector. This has had the side effect of reducing

differential attainment in terms of social groups, such as those defined by geography, poverty and ethnicity. However, the strength of the statistical link between socio-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). Our measures suggest that 90% of the variation in school performance can be explained by the background characteristics of students and the nature of their schools, and that this has not changed since ERA88. One notable outcome of this aspect of our research is that 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.

5) Using a combination of data, we have gone a considerable way towards explaining the different local levels of absolute segregation, and local variations where LEAs for example, against the grain, show relative increases in the segregation of schools. 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). A key feature here is that non-educational factors play the largest part in the determination of patterns of school segregation and these have been largely disturbed by the reform of education over the last decade. In general terms our model has three elements – local geography, school organisation, and admission arrangements – and these are presented in descending order of importance, and in temporal order as determinants of segregation.

a) 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. 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). 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 'poor' families 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.

b) The next most important factor is the organisation and provision 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). 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). Areas with only LEA-controlled comprehensives have less segregation, and tend to reduce that segregation over time. We separate the school organisation factors from the impact of admissions arrangements since ERA88 since 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.

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 actions of the adjudicator, and even the growing number of admissions appeals are not related to substantial changes in socio-economic segregation in schools. This interpretation is confirmed by our interviews.

c) Both LEA and school-level admission procedures 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. 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.

5) There has been a great deal of interest in our research in the 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 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 (see Annex) 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 wish to peddle more complex (but less appropriate) statistical 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 relative new in the arena of educational policy analysis.

2. Full report of research activities and results

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 of 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:

(i) the *scale* of the investigation contrasts with the local, case study and qualitatively based studies which have dominated the British studies of educational markets;

(ii) 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;

(iii) the combination of *different* forms of data in a complex set, using multi-disciplinary techniques;

(iv) *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 1998a), 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

[Note: superscript numbers are used to refer to our existing publications from this project which deal with each result or issue more fully. A list of numbered publications is attached].

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. 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. This data was provided annually from the annual census by DfEE (now DfES) via Form 7, and the Welsh Office (now NAfW) 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. 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 as 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. It should be noted that we conducted rather more interviews at LEA level, and somewhat fewer at school level, than we had originally planned. This is a consequence both of early results indicating an unexpectedly significant role for the LEA and of not wishing to duplicate prior and parallel work on school choice which has mainly focused on families and schools ([1,2]).

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 was 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 school admission brochures, such as Cardiff County Council's 'Admission to schools: information to parents 1998/99'.

Measuring socio-economic composition

Analysis of the socio-economic characteristics of school student populations have employed, where possible, occupationally-based categories of social class. 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 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 FSM students 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 ([3, 4]). 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 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 Form7].

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

The school-level data on social composition was analysed using a range of models developed from the pilot study (Gorard and Fitz 1998). This data has been used to decide whether schools are getting larger or smaller over time, and to document when they close, split, merge, or open. It is also used to calculate the proportion of 'disadvantaged' pupils in each school. The second dataset is a collection of interviews with a variety of LEA officials and school managers from 41 LEAs selected as a sub-sample for more detailed study ([5, 6]). These are used to help explain the patterns of change in the focus schools, and the ways in which LEA procedures for school allocation are related to these changes.

To examine and explain changes in the proportion of disadvantaged pupils in and between schools we devised a *segregation ratio*. 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 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 * S**(|Ai/A – Ci/C|).**

Table 1 - Distribution of students characteristics between schools

	FSM	Non-FSM	Total
School 1	A1	B1	C1
School 2	A2	B2	C2
...			
School n	An	Bn	Cn
Total	A	B	C

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 ([7, 8]).

The interview data was 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

[Note: subscript numbers are used to refer to publications from this project which deal with each result or issue more fully. A list of numbered publications is attached]

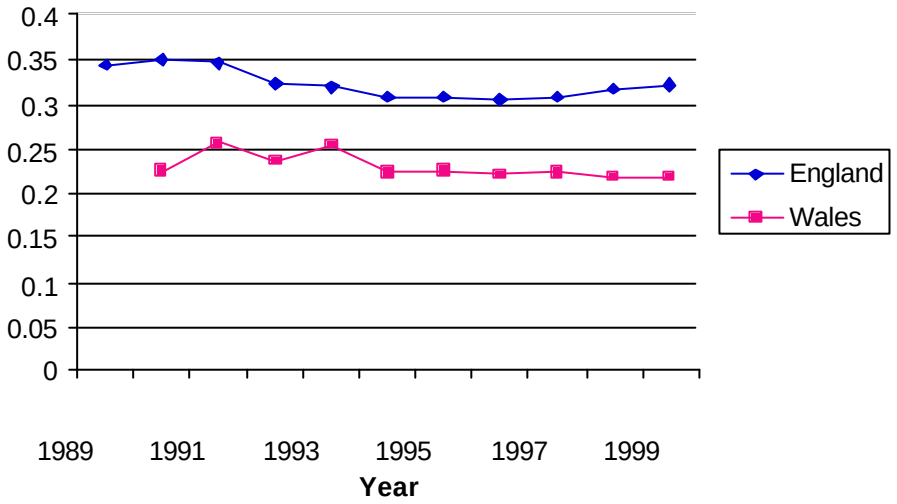
Our findings are arranged in the order of our primary research questions:

1. **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**.

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 both England and Wales, and in all economic regions of England, and represents a powerful social 'movement' ([4, 9]). From 1997 to 2001 segregation by poverty has

begun to rise again, 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 ([10, 11]). Urban areas have also shown the greatest change over time (see Map 1), and some inner-London LEAs now have almost no segregation by poverty, for example (see Map 2).

Figure 1 - National changes in segregation by poverty



2. **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**?

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 ([12, 13]). 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 ([10, 14]), school organisation ([15, 16]), and admission arrangements ([17, 18]) – and these are presented here in descending order of importance, and in temporal order as determinants of segregation.

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. 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 as 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 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 has 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 the school organisation factors from the impact of admissions arrangements since ERA88 since 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 ([19, 20]). 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 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 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 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 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] so 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 at 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). 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. 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 don't win an 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 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].

3. 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?

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) ([21, 22]). This has had the side-effect of reducing differential attainment in terms of social groups, such as those

defined by poverty and ethnicity ([23, 24, 25, 26, 27, 28]). 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) ([29]). We have therefore 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 ([30, 31]).

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

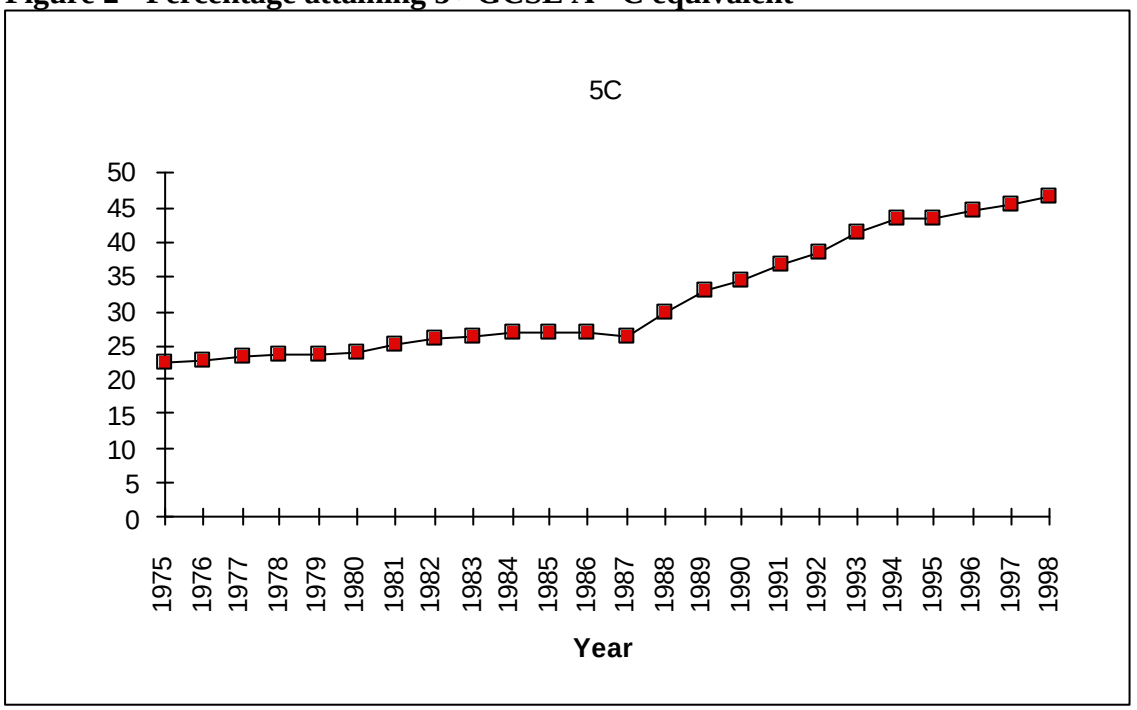


Table 2 - Comparison of results by sector

	% 1GCSE A*-G		% 5GCSE A*-C		A levels points	
	LEA/GM	Fee	LEA/GM	Fee	LEA/GM	Fee
1992	76	86	34	70	13.4	17.3
1993	77	86	36	73	13.6	17.7
1994	80	87	39	75	14.5	20.0
1995	80	90	40	80	14.9	19.2
1996	80	91	41	79	15.5	19.3
1997	81	89	43	83	16.0	19.9

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Outputs

The academic, political and media outputs are listed in full elsewhere. Our publications in the USA, especially in *Educational Researcher* (sent to all AERA members), have gained the project considerable world-wide attention. Many countries are experimenting with school choice models, and therefore the first large-scale study of a *national* system of choice has been seen as valuable by them (in our recent presentation in Berlin, for example). Our publications in social science journals, such as *Environment and Planning*, have shown that despite current critiques of educational research it has something to offer a wider readership. Our publications on methods and in methods journals, such as the *International Journal of Social Research Methods*, suggest that our methodological innovations have some value for researchers in other fields.

We are unable to deposit our dataset at the Data Archive due to its sensitive nature, and the assurances we gave the DfEE (as it then was) and National Assembly for Wales when they provided the school-level data. We undertook not to pass the data on to others, but to destroy it once we had finished using it for the purpose for which it was supplied (although not necessarily at the end of this project). However, we would be happy to use it to assist future work or re-analysis in this area.

Impacts

The impact of this work has been considerable without necessarily changing school allocation policy at a national level (where policies tend not to be directly evidence-based). The project has been mentioned in Hansard three times so far, and both presented to and debated at the National Assembly for Wales. As a result of these presentations, and the first book arising from the project, Stephen Gorard became an expert adviser to the Minister for Education and Training in Wales. Many MPs have contacted us for reports and working papers, to provide evidence for questions at Westminster or to deal with a constituency query.

Our work on the relationship between local school diversity, admissions arrangements, and segregation was presented at the Institute for Public Policy Research (where we have made three invited presentations so far). This caught the attention of the press, and our subsequent interview with Radio Four's Today Programme was held back by them until the day that the recent Specialist Schools Programme was presented to parliament. Although many of our findings have generated considerable public interest it is perhaps this story that has led to the most prolonged attention so far. We appeared on the national television news, national radio, and newspapers. We are still being contacted by politicians, school governors, teachers, and researchers as a result. This shows again the importance of 'media' dissemination to audiences who would otherwise be totally unaware of our work - however many books and articles we write.

To summarise the impact of this work so far, it is notable that one of our researchers recently conducted a web search for our project references and found over 100 hits at that time, from all continents except Africa. We have appeared in Finnish newspapers, are required reading on Argentinian course handouts, are cited in the 'Reagan Pages' in the USA, used as evidence by the Campaign for State Education in Britain, and form part of school governor training for Neath Port Talbot LEA, for example. We are not convinced that educational change should be based on the evidence from only one study, even one as large-scale as this, but the level of interest in our results among non-academic users suggests that our results will, at least, contribute to relevant discussions in several arenas.

Future research priorities

Given that segregation between schools has begun to rise since 1997, and in light of policies to increase the proportion of specialist and faith-based schools, we feel that it is important to continue monitoring this measure of initial education. At BERA 2001 we realised that our existing dataset was complementary to that held by John Coldron and colleagues at Sheffield Hallam, as a result of their DfEE-funded study of school allocation and admissions. We have therefore arranged to run an even more detailed cross-analysis of the impact of school allocation on segregation, in the near future. We hope that this will lead to interesting results and a joint publication. We also feel that our multi-stage approach would end more naturally with a detailed re-consideration of the role of families, in light of the results presented here and recent policy changes.

3. Significant achievements

The project is the most extensive exploration of the impacts of market-orientated policies on a national system of education. A fresh picture emerges from the study about a stratified British schooling system in 1989 that has been changed but not transformed by the introduction of choice and competition policies. This runs counter to more conventional narratives of increasing ‘polarisation’ and ‘stratification’ that emerged from small scale, snapshot studies of education markets. It also counters the social justice arguments of market-policy advocates. Building on our political arithmetic approach to policy relevant research this project has demonstrated the continuing importance of viewing policy impacts over long time intervals and in a variety of

localities. We can thereby derive a broader and more complex account of the impact of policies in general, and education markets in school systems in particular.

A very significant outcome of the project has been the creation, maintenance and extension of a unique and powerful mixed dataset. This data is hierarchical in structure. At the highest level it contains records for each state-funded school in England and for each school, whether state-funded or fee-paying, in Wales. These records contain school organisation information (such as size, sector, method of entry), local context figures (such as population density), student composition figures (such as gender, language, ethnicity), and school outcomes (such as GCSE results), all for as many years as these have been available (from 1989-2000 for the most complete fields). While the dataset refers to primary and secondary schools, our emphasis here has been on secondary schools. At the next level the dataset consists of records for each of 41 LEAs in England and Wales, selected as a sub-set to represent the variation we encountered in our analysis at the first level. Each record consists of context figures about the LEA, their published school allocation criteria, and transcripts of interviews with one or more LEA officers involved with the school admissions process. At the next level the dataset consists of records for 31 schools within these LEAs, including school literature, and transcripts of interviews with one or officers involved with the school admissions process.

The importance and flexibility of this dataset is exemplified in the way in which we were able to use it to address questions put to us by the Institute of Public and Policy Research about the trajectories of specialist and faith-based schools. This use had not been specifically foreshadowed in the research. Similarly, we have been able to respond to requests by school governors and headteachers to provide useful contextual data for the performance of their school. At one point our data were being used by a consortium of headteachers in Rhondda Cynon Taff to defend their sector against the charge of underperformance. As well as this local significance, our work has proved to have considerable international policy relevance (see below).

We have contributed to a wider international debate within social science about the meaning and measurement of segregation, having developed two ‘new’ methods of measuring segregation in organisations and classified there in terms of well-established benefits and limitations. The key issue for us has been compositional invariance – the ability of a measure to handle simple changes of scale over time. While we have not solved the problem (no one index is ever likely to be the ‘best’ overall) our approach has generated considerable interest at the annual Cambridge Stratification Conference, in *Social Research Update,* in *Sociology*, and at the American Educational Research Association. We have also been part of an increased awareness and use of geographical techniques in educational research, which has enabled us to analyse and present our data in accordance with the underlying theoretical model of the importance of the ‘local’. This is part of a new economic sociology of markets, which contradicts universal explanations such as human capital theory and rational choice theory, and suggests instead that the determinants of complex social movements, such as changes in segregation, are largely historical and geographical.

4. Dissemination

We have sent the details of one book, three book chapters, 20 journal articles, 11 working papers, 8 conference presentations, and 4 newspaper articles published so far to REGARD, and attach a list to this report. We are sending details to REGARD as publications come 'on-line'. It is difficult to be precise about future publications as events move so quickly but, apart from another book and five journal articles in press and six articles currently under review, we expect to complete most of the following in the coming year:

We are planning two further books (proposals are under review). One will be a shorter policy-relevant paperback, and the other a more detailed academic account of the project. We are working on five further journal articles - on the changing composition of faith-based schools, on our school-level interviews about admissions, on the nature of markets in the new economic sociology, and the 'final' accounts of our regression models explaining changes in segregation and changes in outcomes over time. Drafts of these will also be presented at conferences and published very quickly as working papers. In addition, we have been invited to contribute two chapters to forthcoming edited books - one on the relationship between the public and private sectors in schools, and one on the management of diversity.

Although un-funded, as not budgeted for in the initial proposal, we are holding a dissemination conference in early 2002. To this we are inviting all of the participants in our study from LEAs and schools, interested parties from the DfEE and the National Assembly for Wales, and a number of academics.

Our project website (www.cf.ac.uk/socsi/markets) contains details of the project, its progress, and current activities, and it allows users to download our working paper series in PDF format. The number of hits and direct links are growing, and we intend maintaining the site for the foreseeable future.

Our work has been frequently featured in the national and regional media (including BBC1 national news, and national broadsheet newspapers), and we would expect that our other dissemination work will continue to attract attention, leading to further stories of this type.

As a direct result of this work we have formed links with national organisations such as Kidscape, the IPPR, CASE, the British Humanist Society, and the National School Governors Association. We would expect to continue to work with these and other bodies. We have presented to the National Childcare Commission, to policy-makers in Berlin, worked with the Kidsclub Network, briefed Members of the Westminster Parliament, and addressed members of the National Assembly for Wales on this work. The work has been cited by the DfES Standards and Effectiveness Unit. Stephen Gorard has been asked to become a non-political adviser to the Minister for Education and Training in Wales. As a direct result of this work Stephen Gorard was also invited to take part in a (successful) bid with four universities in other EU countries for a grant of 750,000 Euros to develop an international system for measuring educational inequality.

5. Nominated publications

We suggest the following two, although given the varied nature of our publications so far they are difficult to encapsulate in only two. The first presents a very brief overview of our findings at that point in time, for a US audience. The second examines some of the wider methodological considerations stemming from our work, for a social science audience. In presenting only these two we can unfortunately not also supply papers with detailed accounts of our interviews, detailed calculations of either segregation or variation in schools outcomes, nor consideration of related issues such as school diversity, spirals of decline, the modifiable areal unit problem, or the role of housing. Nor are we able to include our most recent work, presented at BERA 2001, which starts to bring all of these elements together, explaining all local variation in segregation in terms of geography, school organisation, and local admission arrangements. Many of the relevant papers are, however, referenced within the two nominated (and the thirty or so peer-reviewed pieces from this project so far are listed below).

Gorard, S., Fitz, J. and Taylor, C. (2001) School choice impacts: what do we know?, *Educational Researcher*, 30, 7

Gorard, S. and Taylor, C. (2002) What is segregation? A comparison of measures in terms of strong and weak compositional invariance, *Sociology*, (forthcoming)

6. Staffing

Name	DoB	Grade	Start date	End date	Destination
Patrick White	14/04/71	RA1A6	1/9/99	31/3/00	Academic post RA, same department
Dr. Chris Taylor	22/10/72	RA1A6	1/1/00	31/7/01	Academic post RA, same department
Patrick White	14/04/71	RA1A6	1/4/01	31/8/01	Academic post RA, same department
Katie Rushforth	04/04/79	RA1A6	1/8/01	31/8/01	Other MSc, same department

7. Virements

We moved £631 from UK travel to O/S travel, essentially to provide an RA with a chance to participate in an invited symposium on markets and education at AERA 2001. This led to useful contacts and to data-sharing with other projects with large datasets. We moved a total of £3,455 from exceptional items, consumables, and UK travel to staff costs and associated overheads. This enabled us to employ an extra RA for a short time towards the end of the project to manage completion of transcription, conversion/coding to NUDIST, updating the overall database, organising summary of activities and impact. Among other things, this allowed the main RA to move one month early to a new post in the school funded by the ESRC Teaching and Learning Programme, whose Steering Committee had expressed a sense of urgency about the start dates.

8. Major difficulties

Conducting research where the findings have run against the grain of previous accounts of the impact of educational markets has been both a frustrating and intellectually challenging experience (see Annex). Frustration arises from reporting research in an intellectual field where measures such as 'segregation indices', 'segregation ratios' and the like – well known and understood in other branches of social science and, indeed in American educational research – have been received with a degree of mystification. Consequent critical commentary and debate has been extremely limited, evidenced in the very few refereed published responses (or even citations) to our work. Our experience also reveals some technical difficulties in reporting large-scale studies in education journals. These difficulties, entirely understandable, relate to making methods and data transparent and to difficulties of presenting coloured maps and graphs. Any review of current publishing policies might suggest varying the length of articles in journals, and increasing the proportion of methodological comment, perhaps taking advantage of trends in electronic publishing, by making articles non-linear and allowing the attachment of datafiles.

9. Other issues and unexpected outcomes

One side-effect of working against the grain (see Annex) was that we widened our area of consideration. We spent considerably longer than we had, perhaps naively anticipated, working on the meaning and methods of measures of segregation, and consequently published in a more general social science literature as well as in dedicated educational journals.

The power of our dataset is exemplified in the way in which it can be used to address questions that we had not originally considered. For example, the issue of the nature and composition of specialist schools came to prominence in 2000/2001 long after our proposal. Yet we were able to produce long-term evidence of the 'trajectory' of such schools within a month of being asked.

10. Nominated rapporteur

Professor Ron Glatter, The Open University
r.glatter@open.ac.uk

PUBLICATIONS FOR R000238031 (as at 16/11/01)

Books/chapters/articles

1. 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
2. Gorard, S. (2000) Parents, children and school choice, pp. 121-139 in Stott, K. and Trafford, V. (Eds.) *Partnerships: shaping the future of education*, London: Middlesex University Press, ISBN 18 898253 28 5
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ANNEX (a summary of academic resistance to our evidence)

In one sense, the purpose of this project was very simple. In 1997 we were present at a dispute concerning the findings of a group of researchers at Kings College (represented by Gewirtz, Ball and Bowe 1995). Their finding was that the process of choosing a new school was undertaken differently by different social classes in England and Wales, and their conclusion was that, therefore, schools would have become more polarised by class after the Education Reform Act 1998 than they were before. This finding was disputed by a researcher from Manchester (represented by Tooley 1997), who presented evidence of inconsistency and inaccuracy in the research, as it was published. Given that the debate was about the meaning of only 100+ interview narratives from one year in a couple of London LEAs, it seemed that even when resolved it would not provide definitive evidence either way. We therefore decided to test, in a much more robust manner, the proposition that schools in England and Wales had become more polarised by class after 1998.

In another sense, even this rather simple test proved unpredictably complex in implementation, especially as we decided to consider also the relationship between the changing composition of schools and their outcomes. The project therefore led us further into issues that we had not foreseen, such as, what exactly is 'social polarisation' and how can we measure it most efficiently?

Our answers have not proved popular with some academics, while they have attracted considerable media, political and practitioner attention. Our early work for the pilot study (Gorard 1997, and Gorard and Fitz 1998a) used figures for free-school-meal eligibility (FSM) for a very limited number of LEAs from 1989 to 1997, and two measures of between-school segregation - the areal segregation index and the school-based segregation ratio. We found no evidence of a general increase in polarisation between school intakes over time, and our conclusions therefore contradicted the findings, as they presented them, of the Kings group, most other UK research at that time (e.g. Willms and Echols 1992) and much international research on this issue (e.g. Waslander and Thrupp 1995). Our work was criticised by others, but without peer review of the criticisms, on four main grounds: that it conflated the change from recording take-up of and eligibility for FSM, that it only applied to Wales where the LEAs were based, that our index was flawed in a particular respect, and that we must be wrong since other studies have come to a different conclusion. Since these criticisms were often made verbally at conference, or as anonymous referee comments recommending the rejection of our papers, they made our task harder without actually allowing us the courtesy of a formal right of reply.

For the record:

- The annual school census in Wales, unlike that in England, recorded FSM eligibility for each year we used in our analysis
- Our calculations have now been conducted with all schools (primary and secondary) in England and Wales using FSM take-up, FSM eligibility, first language, additional educational need, and ethnic group (for as many years as these have been available). The results show the same picture for each indicator at each level. Social polarisation between schools did not increase from 1989 to 1997 (Gorard and Fitz 2000a, Gorard and Fitz 2000b). It is interesting that the critics did not direct their 'it is only a local effect' argument at those

researchers, including themselves, who worked on an smaller scale (considerably smaller even than our first attempt) in almost exclusively London settings.

- While no index of segregation or polarisation is above criticism, we are confident that our analysis does not have the 'flaws' attributed to it. In the only two published 'criticisms' their authors actually *repeat our own findings* (of a relationship between poverty and segregation, and of a growth in segregation after 1996) but claim them for their own in a way that suggests that they somehow refute our claims ([32]). Ours is the only analysis of this scale and over this period of time. It uses five different indicators at five different levels of aggregation from school to national. It uses all major indices of segregation/polarisation (including Dissimilarity, Atkinson, Gini, Information, Hakim, Isolation, and Hoover indices). All lead us to the same conclusions. Our preferred index (segregation) has many advantages over the foregoing especially in terms of compositional invariance (Gorard and Taylor 2002), and our segregation ratio has anyway never been criticised (or even discussed by others). Several of the informal criticisms of our work have been unclear about the nature of the index we were using (most commonly confusing it with Dissimilarity, or Coleman's index), or have made other unfounded comments (such as that we need to conduct null-hypothesis significance tests when looking at changes over time in our population data), or that we need to examine between-school segregation at an individual student level (which is clearly impossible since it is, by definition, a group effect).
- All of the 'contrary' studies we have examined show significant defects. The most common is that they simply do not set out to test what we did. As with the original Kings study, they usually examined the process of choice at a very local and small scale (many in inner London only), and hypothesised a growth in polarisation as a result. They usually looked at only one year of entry, and therefore not only lacked a suitable comparator before the impact of choice, they actually lacked *any* comparator at all, and had no justification for making claims about changes over time (Gorard, Fitz and Taylor 2001). Some studies are simply wrong. Ambler (1995) used data from the 1940s to test the impact of choice in the 1990s. Waslander and Thrupp (1995) have contradictory data and conclusions, due apparently to misprints in tables that have never been resolved (Gorard 2000). Gibson and Asthana (2000) commit what we have termed the 'politicians error' of ignoring changes over time in the composition of what is being measured (Gorard 1999, 2001). Noden (2000) confuses calculations using our segregation index with the dissimilarity index, and averages figures for each LEA regardless of their number of schools to reach a totally invalid national 'arithmetic mean' (Gorard and Taylor 2001).

These challenges, which themselves raise important question about the nature of the current peer review process and its relationship to scientific progress, have slowed our progress in two ways - by not allowing us to cumulate our argument through publication as fast as we would have liked, and by encouraging us to rehearse arguments within educational research that are more mature in other fields, such as occupational sociology. This has had the unintended benefit of widening the scope of the project and allowing us to publish in a wider literature (by both discipline and country) than we originally intended. But however carefully we have dealt with criticisms, and however widely we have disseminated both methods and findings the same group of UK-based researchers continued to object to our work both informally and as referees (but they have not, in the main, cited it in their own work, even to dismiss its worth, nor have they generally published, and thus had reviewed themselves, any of their counterclaims). Having dealt with the four

families of objections above we then encountered at least four more over the period of the project. These are that: whatever we have shown there must be polarisation happening at some other level of analysis; whatever happens in general there are an increasing number of schools in spirals of decline; even if what we say is correct we should not publish it; and that the referee has heard that someone *else* has objected to our index.

We have, therefore, also had to deal with these four families of reasons to ignore our findings. For the record:

- The objection that there is another level of aggregation at which a radically different process takes place, was dealt with in our first papers. We cannot analyse segregation between schools at a lower level than the school. We have shown a consistent picture for school, local market, district, LEA, economic region, and home country, chiefly via conducting analyses at all of these levels, and through our more general consideration of the modifiable areal unit problem (Taylor and Gorard 2002). This criticism is only speculative anyway, not being based on any actual analysis, but phrased by referees along the lines of 'I feel sure that there would be...'.
- Similarly, some commentators have claimed that schools in spirals of decline (losing pupil numbers and therefore funding, and having an increasingly disadvantaged intake) will have increased since 1988 (e.g. Lauder et al. 1999) but none have actually tested this idea. We have. We found it to be false, chiefly because increasing numbers of the relevant age-group coupled with a programme of school closures meant that the average school size has grown significantly over the period (Gorard, Taylor and Fitz 2002).
- We reject entirely the notion, represented by Thrupp (2001), that we should not publish our findings in case they are used by other commentators to advocate greater school choice. Our findings *have* been used by neo-liberal commentators to try and justify choice schemes, as well as by left-of-centre organisations to defend local comprehensive schools, by Labour MPs to argue against their party's policy on specialist schools, and by humanists to argue against increasing the number of faith-based schools. Our findings have been of considerable interest to local governors and overseas governments alike (as any Internet-based search will attest). Our work is publicly-funded and our responsibility is to disseminate, while making as sure as we can that what we disseminate is rigorous and usable. We believe the alternative to be untenable and dangerous. We have argued against this ideological stance extensively elsewhere (e.g. Gorard 2000).
- The notion that our work is somehow undermined, despite its testing reviews while gaining the publications listed above, because a referee has heard that some unspecified other person has an objection to it would be laughable were it not so damaging and so commonly encountered by us in this project. A similar recent version of this is when a commentator completely dismissed our method, which has a long pedigree within the sociological literature, because they believed that given time they would be able to work out an alternative method (using multi-level modelling) that might give a different result. Our more-reasoned response would be to compare the two or more methods *only* once they both exist (not before). Interestingly, where we have used the same methods with different, but equally high-quality, datasets the findings have generally been accepted without demur by the same journals.