

‘The Ten Percent’: Young people’s access to publicly-funded instrumental music tuition in England: findings from an idiographic geographical case study

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Abstract

This paper reports on research into the provision and take-up of publicly-funded musical instrument tuition by young people living in one English local government area ('local authority'). A range of possible 'hidden' barriers to accessing this tuition have been explored, embracing geodemographic status, geographical distance between home and teaching sites, instrument size and weight, parental vehicle ownership, professionals' perceptions regarding pupils' home location and environment, school culture, and ethnic/cultural background of participants.

The case study local authority's particular cultural and economic circumstances led to its instrumental music service receiving unparalleled levels of national government funding between 1998 and 2011. The then government's intention for this funding was to address a perceived decline in schools' instrumental tuition and to widen access. This came at a time of unprecedented political interest in all aspects of music making and learning. The provision of instrumental tuition within this particular district thus offers a valuable deviant, idiographic study of the impacts of this investment.

Geocoded participant records and local-level data have been explored through the lens of spatial statistical analysis (e.g. location quotients, tests for spatial autocorrelation and distinct distributions, and local regression models). This paper offers a brief summary of some of the underlying geographical and socio-economic trends in patterns of access and participation that emerged over the period of time covered by the data.

Introducing local authority music services

In England, the term 'local authority' refers to the tier of local government responsible for the provision of a range of municipal services, including aspects of education, within a town, city or county. Beginning in the 1940s, many local authorities appointed teams of 'peripatetic' music teachers, whose role was to travel between schools providing instrumental tuition *alongside* any music education that might be part of the school's classroom curriculum. In addition, local youth orchestras, wind bands, choirs and jazz orchestras were instituted, with rehearsals taking place in evenings and at weekends. This provision of instrumental tuition has always been a non-statutory responsibility for local authorities. As a result, there have been frequent fluctuations in public funding and demand for tuition has rarely been met by supply.

By the 1960s, these local authority 'music services' were flourishing and musical performance expectations of pupils very high (Cleave and Dust, 1989). This was the period in which many of the UK's next generation of world-class musicians emerged, many of them later citing their local music service for initial inspiration and support. Yet whilst there were undoubtedly opportunities and resulting personal and professional successes for some, there was an acknowledgement in some quarters from the early 1950s onwards that these might come at the expense of opportunities for the many. An oft-repeated estimate was that only around ten percent of the school population was in receipt of local authority instrumental tuition at any one time (e.g. Mainwaring, 1951; Hallam, 1985, Thomson, 1989).

The Music Standards Fund (MSF)

Despite some commentators continuing to express concerns about apparent inequities (sometimes in vociferous terms, e.g. see Farmer, 1979), it was economics, and not changing social attitudes regarding equal opportunities, which first began to challenge conventional wisdom on music services. A landmark court ruling in 1981, followed by radical reform of local government and education policy in the 1980s and early 1990s, resulted in many services experiencing serious financial difficulties and it is now estimated that approximately fifty closed down during this period (Annetts, 2010). Many others reduced provision or introduced significantly higher charges to parents and schools. The result was that levels of provision, along with policies on fees and fee remission, varied very widely from locality to locality (Hallam and Prince, 2000).

The net result of such diversity was even greater inequities in young people's ability to access the remaining provision. In response, a group of high-profile musicians and educators lobbied the incoming 1997 Government, drawing on recent advances in neurological and psychological research to argue for the extra-musical benefits of musical engagement (e.g. Rauscher *et al*, 1993). This also coincided with political interest in the growth of the 'Creative Industries' as a means of supplementing GDP in the face of declining traditional manufacturing (e.g. see NACCCE, 1999). This

concerted effort was successful and the Government introduced the 'Music Standards Fund' (MSF) from January 1999 in order to both 'protect and expand' local authority music service provision. Subsequently, the Secretary of State for Education pledged that 'every child should get the opportunity to learn an instrument' (Blunkett, 1998).

The MSF was central government's first ever direct financial support for local authority music services, and the sums of money involved were large. Between 1999 and the end of the MSF in 2011, over three-quarters of a billion pounds was distributed to music services in England. Local authority bids were partially assessed on 'the number of young people benefiting from funded provision and 'the extent to which the bid improved equality of access to music services' (DfEE, 1998: Section 27a). By 2002, Hallam *et al* (2002) felt able to conclude that, nationally, the MSF had enabled music services to halt the decline and focus resources on broader, more accessible and inclusive forms of provision.

Introducing the Case Study Local Authority

As funding from the MSF was beginning to make an impact on music service's work 'on the ground', I was working as a music teacher in a 16-19 college in a highly socially and ethnically diverse, urban local authority in England (referred to below as the 'case study authority'). It soon became clear that this particular authority had done particularly well from the MSF. In May 1997 the authority's music service employed 10 FTE staff but this figure was 47 FTE staff by June 2001 (Case Study Authority, 1997; 2001). Such expansion was possible thanks to this particular local authority receiving an allocation from the MSF representing £25.24 for each pupil in its schools. Nationally, the average per pupil allocation was £8.95.

Case study local authority records reveal a clear intention amongst the elected officials to create a service as diverse and accessible as possible. By 2002 this vision was recognised publicly by both the education inspectorate and the National Music Council (Ofsted, 2002; NMC, 2002) Thus the authority could certainly be said to have responded proactively to the MSF impetus to widen participation and support social inclusion in instrumental music. Yet as a teacher in a college whose intake drew from twelve secondary schools across the town, it was anecdotally clear that there remained inequities in the socio-ethnic profiles of the individual pupils coming forward to study our music courses. Such observations led to the hypothesis that there may exist a range of 'hidden' factors which were impacting on some young people's ability to access and sustain engagement with instrumental tuition provision.

As outlined, these anecdotal hypotheses were in themselves not new. What was new was the possibility of testing these hypotheses through recourse to operational data held by the case study music service and through the application of novel geospatial statistics.

Methodology

The case study music service kindly agreed to provide its entire database of 12448 instrumental tuition records covering September 2003 to November 2010, anonymised through the removal of pupil names. A clustering process revealed that these records were, in reality, associated with 6350 individual young people (on the basis of distinct combinations of birth date, gender and ethnicity). With tuition records clustered, it was possible to derive additional information about each pupil, such as the total time spent learning formally with the music service, the total number of instruments studied and primary/secondary schools attending during periods of tuition. Additionally, pupils' postal codes¹ allowed their geographical location to be pinpointed to street level. This, in turn, facilitated the referencing of a wide variety of Government geodemographic data sets, 'geocoded' using the smallest spatial unit of resolution used to represent census data: the 'Lower Level Super Output Area' (LSOA). Typically, each LSOA in England has a population of c.1500 residents. The area of the case study local authority is divided into 121 LSOAs.

Documentary analysis – applying educational history to inform the present

Some writers have commented that the world of instrumental tuition is characterised by slow evolution, with teachers often continuing to practice pedagogies, and to hold beliefs, associated with *their* former teachers (Creech and Gaunt, 2012). Thus, historical documentary analysis (McCulloch, 2011) was employed to identify themes relating to implicit or 'hidden' assumptions regarding young people's access to instrumental tuition on offer. These were found present – to a greater or lesser extent – in discourse surrounding local authority music services over much or all of their entire history. This phase of the work was infused with Adams' advice that 'historical enquiry should seek to make significant and vital connections between past, present and future' (2002: 23). The themes relating to the findings reported in this paper were identified as follows.

- Socio-economic status of participants;
- family vehicle ownership;
- instrument size and weight; and
- distances between pupils' homes and teaching/rehearsing sites.

The 'deviant, ideographic' case study

The goal of the second phase of the research was to 'test' these implicit assumptions through the interrogation of the case study authority data. This approach drew upon the 'idiographic' case study, commonly used within the social sciences (George and Bennett, 2005; Mitchell, 2006). These seek to 'emphasise place as unique assemblages where diverse processes and factors come together' (Crang, 1998: 192). The comparatively generous funding arrangements of the local authority in question characterise it as a 'deviant' or 'outlier' case. These can be very valuable since the distinct circumstances under study can help identify hitherto unexplored

¹ In the UK, postal codes are termed 'postcodes' and in America 'zip codes'. A summary of synonyms for these codes in many other countries can be found at http://www.grcdi.nl/gsb/summary_%20postal%20code%20synonyms.html

hypotheses, variables and causal relationships which will perhaps lead to insights and theories with more general applicability (George and Bennett, 2005).

The analysis was chiefly quantitative, employing a range of recently-developed local spatial statistical techniques outlined below. In themselves, the themes derived from the documentary analysis are what Clinton refers to as 'unobservable quantities of interest' (2004) thus was necessary to identify a range of proxy variables to represent these factors as closely as possible. These were then used as 'predictor variables' for the various geospatial tests. Overall, the intention was to occupy what Goodchild terms the 'middle ground' between the qualitative, idiographic case study and quantitative, nomothetic study in which, 'place-based analysis focuses on how the parameters of the model vary from place to place, and draws insights and conclusions from those variations' (2000: 177).

Selected results

In this short paper, only a few key 'highlights' of the research results are offered. These have been selected on the basis of both insights into impediments to music service participation and in order to demonstrate the range of geospatial analysis techniques employed.

Overall music service 'reach'

A first step in analysing young people's participation was to identify areas well-served and under-served by the case study music service. Simply counting the number of pupils living in each LSOA was too simplistic, since this would not have taken into account areas inhabited by fewer children to begin with (e.g. concentrations of small flats inhabited by young, childless professionals or retired people). Use was therefore made of 'location quotient' calculations, often used in business and geography to compare local concentrations of a particular activity or characteristic prevailing national trends (St John and Richardson, 1989). The 'Service Reach Location Quotient' (SRLQ) was calculated using equation 1:

$$SRLQ = \frac{p_{lsoa} \div p_{all}}{P_{Hallam} \div P_{all}} \quad (1)$$

Here p_{lsoa} refers to all young people receiving music service tuition in an LSOA each academic term², and p_{all} refers to all young people aged 7-16 in that LSOA at the time of the 2001 census. P_{Hallam} refers to the total number of young people aged 7-16 receiving instrumental tuition nationally on February 1st 2005, according to Hallam *et al's* study of that year, and P_{all} refers to the total school population aged 7-16 in England in January 2005, according to school census data.

² In the UK, the academic year is traditionally divided into three 'terms': Christmas, Easter and Summer.

The resulting SRLQ scores were averaged over the 21 academic terms covered by the case study data and then plotted as a ‘choropleth map’ of the local authority (Figure 1). In general, LSOAs on the south-west of the local authority were inhabited by far fewer music service pupils whilst areas in the north-east were often home to far higher numbers of participants as scores of >2.0 demonstrate. The clustering of average SRLQ scores in adjacent LSOAs is visually quite clear but a Moran’s *I* test allows the researcher to be sure that such visual clustering is evidenced statistically (Lloyd, 2010). In this case, a statistically-significant Moran’s test result indicated that $I = 0.55$ ($p < 1 \times 10^{-15}$), suggested a relatively high level of clustering (the maximum score for *I* in a Moran’s test is 1.0).

Overall, the town was bisected by a line extended from the north-west tip to the south-east side. This ‘line’ is, in fact, a major inter-city railway, suggesting that old folk saying ‘living on the wrong side of the tracks’—which describes the way that socio-economically distinct communities may be separated by physical features of the landscape (Price, 2011)—may well be applicable. In order to test whether the distribution of music service pupils’ homes was related to the town’s prevailing socio-economic landscape, the non-parametric test proposed by Syrjala (1996) was employed. This compares the values of two geocoded datasets with shared coordinates. Here, the comparison dataset drew on income deprivation data from 2010 edition of the UK ‘Indices of Multiple Deprivation’. The test statistic was small (0.0393) and non-significant ($p = 0.109$). We may therefore conclude that these datasets are drawn from the same spatial distribution and that prevailing socio-economic conditions in the local authority were strongly related to music service tuition take-up.

Subsequently, a regression model helped ‘unpack’ this finding further, seeking to identify which socio-economic factors were most strongly associated with tuition take-up. A wide variety of ‘proxy variables’ were initially explored as predictors for this module, with the ASV selection routine being used to assess which combination produced the best R^2 score, and thus best explained the variance in the average SRLQ scores (Field, 2012). Post-hoc VIF tests were employed to ensure that the observed regression coefficients were accurate and not overly distorted by multicollinearity. Table 1 offers the final model for average SRLQ scores; this can explain over 60% of variance in these data. ‘CYPSubDomScore’ refers to an official measure of educational deprivation, with higher scores representing higher prevalence of truancy, school drop-out and low educational attainment. ‘PC_DegHolders’ refers to percentage of local adults holding university degrees and ‘PC_NonWhiteBritish’ refers to the percentage of the LSOA population hailing from non-White British ethnic backgrounds.

Table 1: Average SRLQ regression model

	<i>Estimate</i>	<i>Standardised estimate</i>	<i>% of R² (LMG test)</i>	<i>Std. Error</i>	<i>t value</i>	<i>p</i>
(Intercept)	1.44203			0.13715	10.51	<1x10 ⁻¹⁵
CYPSubDomScore	-0.01095	-0.326	19%	0.00226	-4.85	<1x10 ⁻⁵

PC_DegHolders	0.02053	0.208	8%	0.00646	3.18	<0.01
PC_NonWhiteBritish	-0.01377	-0.542	33%	0.00153	-8.99	<1x10 ⁻¹⁴
Residual standard error for model : 0.312 on 117 degrees of freedom						
<i>R</i> ² for model : 0.601						
<i>F</i> statistic for model: 58.9 on 3 and 117 DF, <i>p</i> : <1x10 ⁻¹⁵						

Of the three proxy predictor variables, PC_NonWhiteBritish explains the most variance (33% of the total R² according to a post-hoc LMG test (Grömping, 2006)). As the percentage of non-White British people in the LSOA rises, the number of young people undertaking music service tuition decreases. A similar, albeit less pronounced negative relationship is found between average SRLQ and CYPSubDomScore. PC_DegHolders makes a positive, albeit smaller still contribution, indicating that areas inhabited by more graduates also tend to have greater levels of instrumental tuition take up Overall, Table 1 tells quite a clear story: Instrumental tuition was taken up more widely in case study areas populated by high numbers of degree-holders and white British people, whose children achieved better results in school examination, exhibited lower levels of school absence and were more likely to stay on in post-compulsory education.

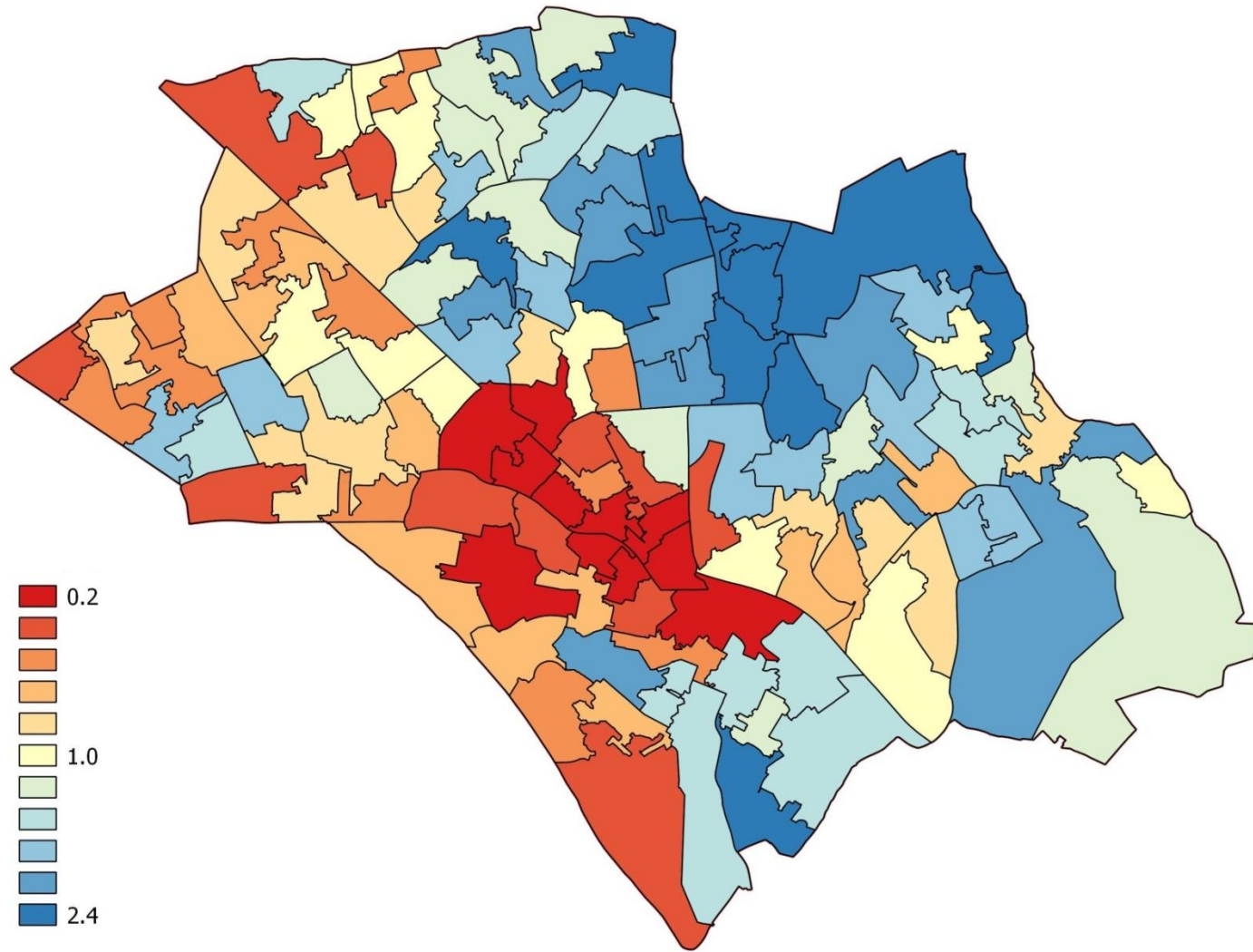


Figure 1: A choropleth plot of mean SRLQ scores for each LSOA within the case study local authority. Increasingly darker red shading indicates below-national levels of participation, whilst increasingly darker blue shading indicates above-national levels.

Home-school distance and the physical properties of instruments played

Literature dealing with local authority music service tuition has often highlighted concerns that pupils can be put off continuing their lessons in cases where they live farther from school or where they play a large or heavy instrument (e.g. see Long, 1959; SCAM, 1960; Cleave and Dust, 1989; Ofsted, 2004; Artservice, 2005). In order to investigate these issues within the context of the case study local authority, home-school walking distances were calculated using Google Map's Distance Matrix API (Google, 2015). Data on instrument weight and size were extracted, with permission, from Amazon's product database.

Amongst pupils who both began and ended their tuition whilst at primary school, a regression model revealed a small, statistically significant negative relationship between the total period of time over which tuition was received (in days) and the instrumental weight ($\beta=-9.42$; $SE=2.05$; $t=-4.6$; $p<1 \times 10^{-5}$). Whilst the R^2 for this model was small (0.09), this still implies that around 1% of total variance in tuition durations for primary school pupils can be explained through the weight of their instrument. Specifically, the coefficient estimate of -9.42 suggests that as instrument weight increases by 1kg, length of tuition reduces by 9.42 days. With larger instruments, the potential reduction of study time become quite large indeed, suggesting instrument weight is a factor worthy of further exploration. In the case of the 20KG tuba, 188 days is only two-days short of a full UK academic year:.

- Saxophone (c.7.5KG): -70 days
- Cello (c.9.5KG): -89 days
- Baritone (10KG): -94 days
- Tuba (20KG): -188 days

Amongst music service pupils who commenced tuition at primary school but continued into secondary school, home-school distance was found to be a statistically significant factor. Again this was able to explain around 1% of variance in total duration of tuition ($\beta=-30.6$; $SE=14.4$; $t=-2.13$; $p<1 \times 10^{-5}$). As home-school distance increases by 1km, the total time spent in receipt of tuition on this instrument at secondary school drops by 30.6 days.

The mean geodesic home-secondary school distance in England is 2.44km (Burgess et al, 2006), with mean home-primary school distances considerably shorter. The two distance-weight models presented above indicate that whilst home-school distances may not be a critical factor for primary school pupils, once the secondary transition has taken place, the additional distances to school may begin to exert a greater influence on pupils' decisions to continue or cease tuition. That instrument weight is not a significant contributor in the second model suggest that as secondary-aged pupils become physically bigger and stronger they are better able to transport a larger instrument.

Conclusions

Even though only a few results are presented above it is clear that between 2003 and 2007 within the case study local authority, there remained significant inequalities regarding young people ability to engage with, and sustain, instrumental tuition. The reasons for this are complex and involve far more than funding alone: even in an area with plentiful MSF funding, participation was not even and certain client groups benefited more than others. Hidden factors identified in historical literature may persist into the present and these should be considered at a strategic level when planning public instrumental tuition schemes in future. Some of these are far from obvious, e.g. physical properties of instruments and prevailing levels of educational achievement in the local area. These factors may be 'tightly knotted' (highly interrelated). Although not presented here, other strands of the research have revealed that pro-active attempts to address these inequities at a policy level can sometimes be effective, such as initiatives in England for some schools to become local leaders in arts provision through the 'ArtsMark' and 'Specialist College' schemes.

More generally, it is hoped that this paper has demonstrated the potential of both the deviant ideographic case study approach, alongside newly-developed geo-demographic/spatial statistics, as a means of facilitating further enquiries into educational access and equality.

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